P.S

THE PREVENTIVE MAINTENANCE MONTHLY

Issue 17 1954 Series

The Engineers join Ordnance in PS Magazine

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON

IN REPLY REFER TO:

2 November 1953

The Editor
PS Magazine
Aberdeen Proving Ground, Md.

Dear Sir:

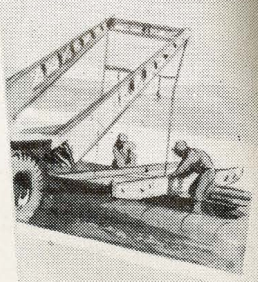
Training in proper Preventive Maintenance is not limited to any one service. It touches everything in the Army from a soldier's shoes to the highly mechanized instruments of modern warfare. That's why I'm particularly pleased to join forces with the Ordnance Corps in promoting the spirit of better maintenance on Engineer equipment through PS Magazine.

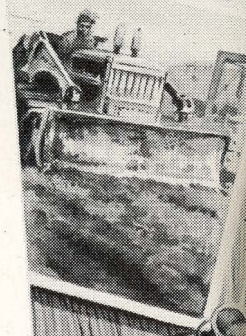
The soldier who uses Army equipment is the very foundation of PS Magazine. Every Engineer -- be he private, non-com or officer -- is encouraged to send his ideas or problems on maintenance directly to the editor. Thus, fresh information and ideas may be printed when needed most by other soldiers in the field.

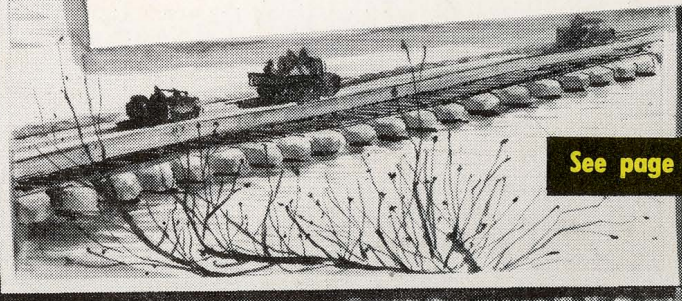
So -- we of the Corps of Engineers are enthusiastic about having a part in PS Magazine. Let's get on with the job of good Preventive Maintenance. I believe, as PS has so well put it, that maintenance is everyone's job.

Sincerely,

S. D. STURGIS, JR.
Major General
Chief of Engineers







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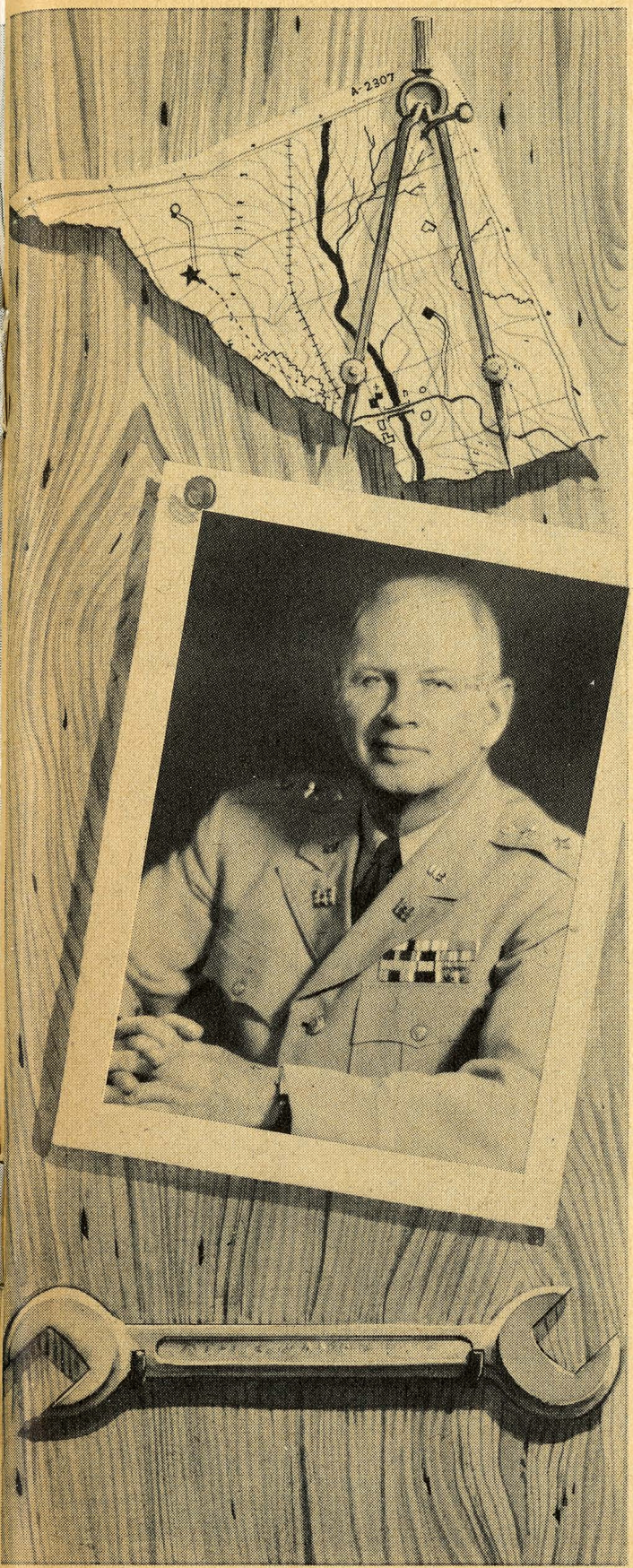

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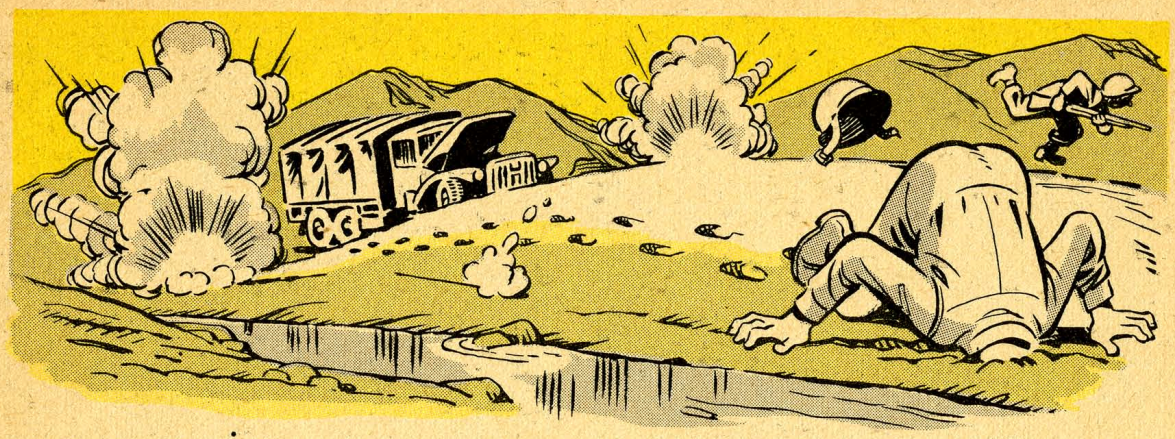
KEEP IT CLEAN...

YOUR BATTERY, THAT IS

Tales are going around about guys having dead batteries, batteries running down, trucks that won't start, "spook-currents," and all kinds of troubles. To hear tell, you'd think batteries weren't any good at all. Not so, friend, not so.

But, you know something? That's a darn good battery we have in our new vehicles. Yep . . . it'll stand more abuse than two of the old ones, and still keep your buggy running. Shucks, Ordnance got to testing those batteries to see what it did take to kill one of 'em, and before they got done it had to be knocked on the head with a club, and even then it wouldn't lie down.



Seriously, many cases of "battery failure" are due to just one thing: Dirty Battery. One thing you can't do to one of these batteries (or any other battery) is to leave electrolyte salts on it. Those salts get there from acid fumes given off from vents or from spilled or overflowed battery acid. When any acid liquid is just wiped off or left to dry, it leaves electrolyte salts. Those salts will pick up moisture from the air, and when they get moist they carry current like crazy. You know you can't keep using a tire with a leak in it, and you can't keep using a battery with a current leak, either.

It's easy to stop this. First of all, every time you wash your truck, flow lots of clean water over the batteries and carriers—**not** the steam cleaner. And then when you pull the 1000-mile service, give a real careful look at your batteries and the battery carriers.

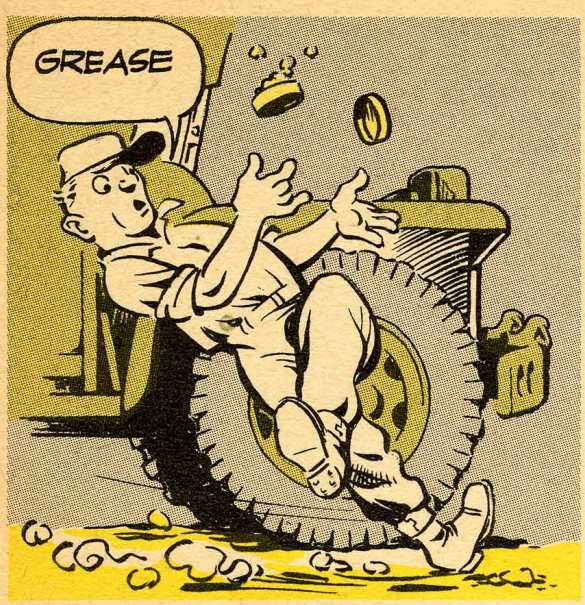
If they are the least bit dirty, haul 'em out and give everything a good scrub with fresh water and a scrub brush. Then rinse with a solution of baking soda and water. One pound of soda in two gallons of water is enough for a half dozen vehicles. Let the soda solution sit on the battery until all foaming stops, rinse it off with clean water and try again. When you don't get any more foaming, you have neutralized all the acid on your battery and the carriers. Rinse once more with fresh water and let dry.

Be sure your battery caps are tight, and that you do not get any soda into the battery. Soda will kill acid just as fast inside the battery as outside it.

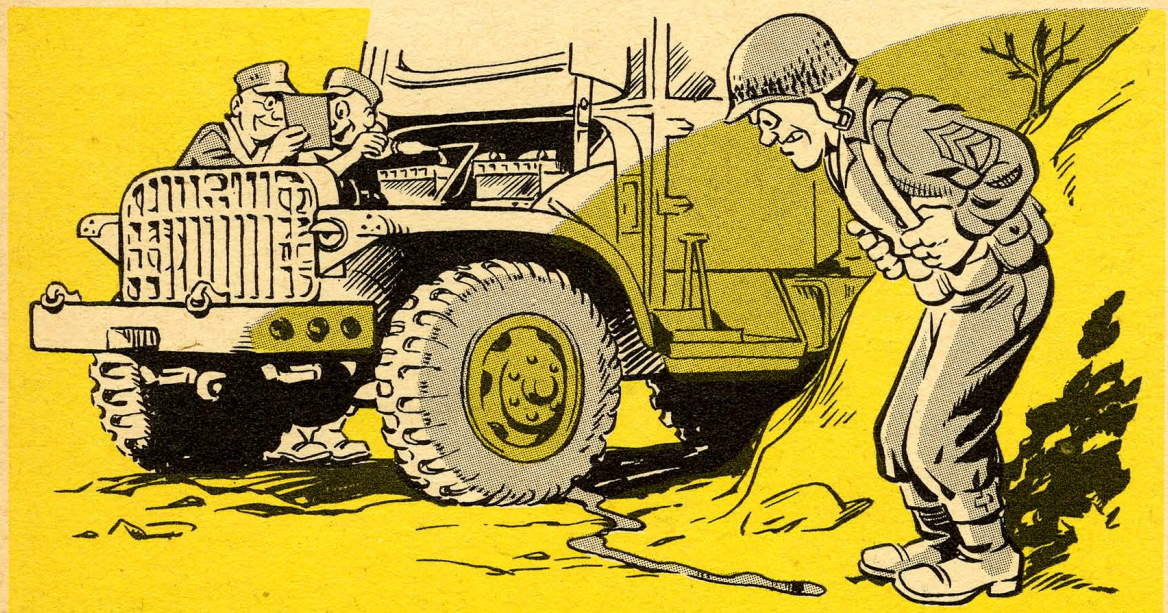
While you have the soda handy, remember to clean the cable terminals and dunk them, too. And rinse them in fresh water. If you run out of soda you can get by with using lots of fresh water.

This is a good time to paint your battery carriers, using acid-resistant paint (52-P-100-125). If you can't wait for the acid-resisting type, remember that any paint is better than bare metal. Be sure you first scrub or sand off any rust from the battery carriers.

While you have the batteries out is a fine time to check them all over for leaks, cracked cases, signs of chafing and so on. Then fill them to the proper level with distilled water and put them back.



Remember to put a light coat of grease on the battery posts and the cable terminals. You don't get as much good from a great gob of grease slapped on top after hooking up as you do from a light coat spread all over the post and the clamp after the terminal is securely fastened (and if the metal handles are attached, clean and grease them, too). So that's where you need the grease. The best grease for the purpose is GAA or Grease, high melting point. But, CG or Petrolatum will work, and any grease is better than no grease.



Now that you have your batteries all shiny and spotless, the easiest way in the world to keep them that way is to be darn careful when filling 'em. Overfilling a battery is just as harmful as underfilling 'em. When you come to the mark, **stop.**

TRANSFER-CASE VENT

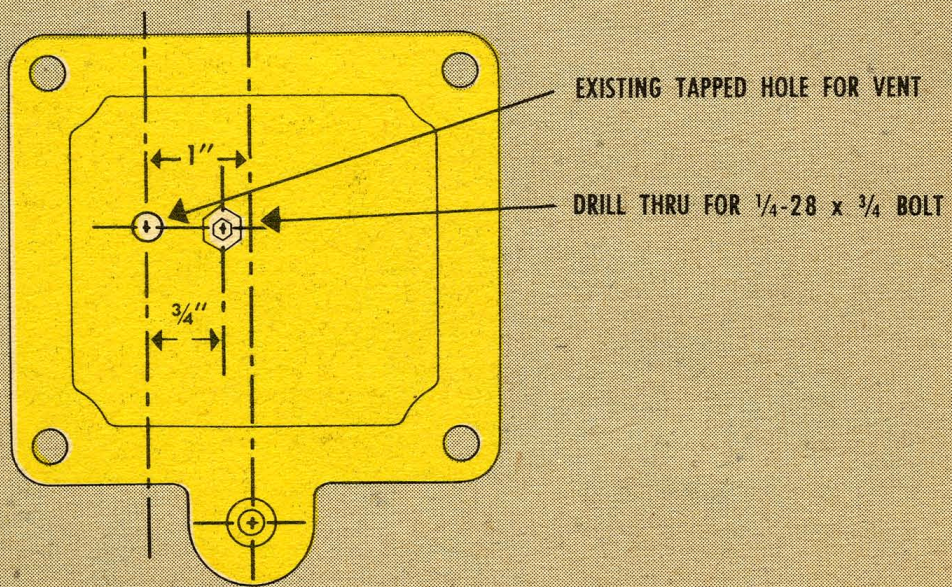
A lot of the trouble with leaking oil seals on your M34 2-1/2-ton transfer case is caused when the gasket under the shifter-shaft inspection-plate is stretched and forced upward from lubricant splash. This seals off the vent fitting on the inspection plate.

The gasket has two vent holes that are purposely offset from the air vent in the plate so as to let out air and keep in the gear oil. So the cure is to keep this gasket in place. If you're having this trouble, you can fix it this way:

Drill a hole through the plate, not too far away from the vent-fitting tapped hole (Fig. 1). Then plug the hole with a bolt (1/4"-28x3/4") through the underside. Seal it with Permatex and hold it snug with a lock-washer or self-locking nut on the outside of the inspection plate (Fig. 2).

The head of this bolt will hold the gasket away from the vent hole. Then air can get out of the transfer case before it' builds up enough pressure to blow out your oil seals.

FIG. 1.



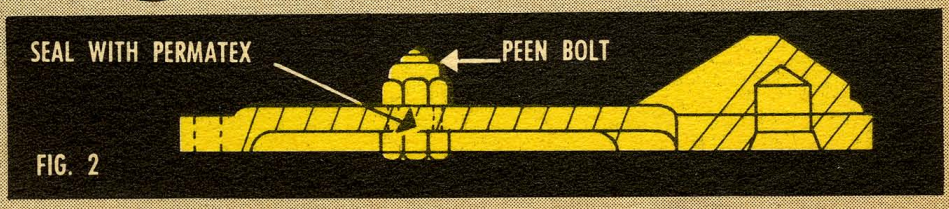


FIG. 2

HAND-BRAKE ADJUSTMENT

Word comes that some fellas are bending issue tools to adjust the linkage of their M34 2-1/2-ton hand-brake. Hate to see you go to all that trouble when you've got three common tools in Tool Set, General Mechanic's, 41-T-3534-30, that'll do the job.

You can use a 7/16" open-end wrench (SN 41-W-991) to hold your cable while you're using a 1/2" open-end wrench (SN 41-W-1002-40) to loosen the jam nut. When you've got the jam nut loose you can use a 1/2" box wrench (SN 41-W-622) on the top nut and rotate it clockwise which'll take up the slack in the linkage with the hand lever fully released. When you can apply the hand lever at least one-half of the ratchet range, you've got a normal adjustment.

LAME GOVERNOR

One sure way for your governor to get out of kilter is to run without oil on its shaft. This happens sometimes between rebuilds on Reo trucks causing the governor bushing to wear, letting air get through around the shaft. And since this contraption's efficient operation is governed by how much air gets through the shaft's center, air creeping through anywhere else will make it inaccurate.

The bushing is made of porous metal and lubricated by a wick under the lubricating-plug (Fig. 3). While the wick should stay oil-moist from rebuild to rebuild it sometimes doesn't and fouls up the works. Check the left wick every thousand miles and keep it damp with OE-30 oil—just like you do on the 5-ton 6x6's.

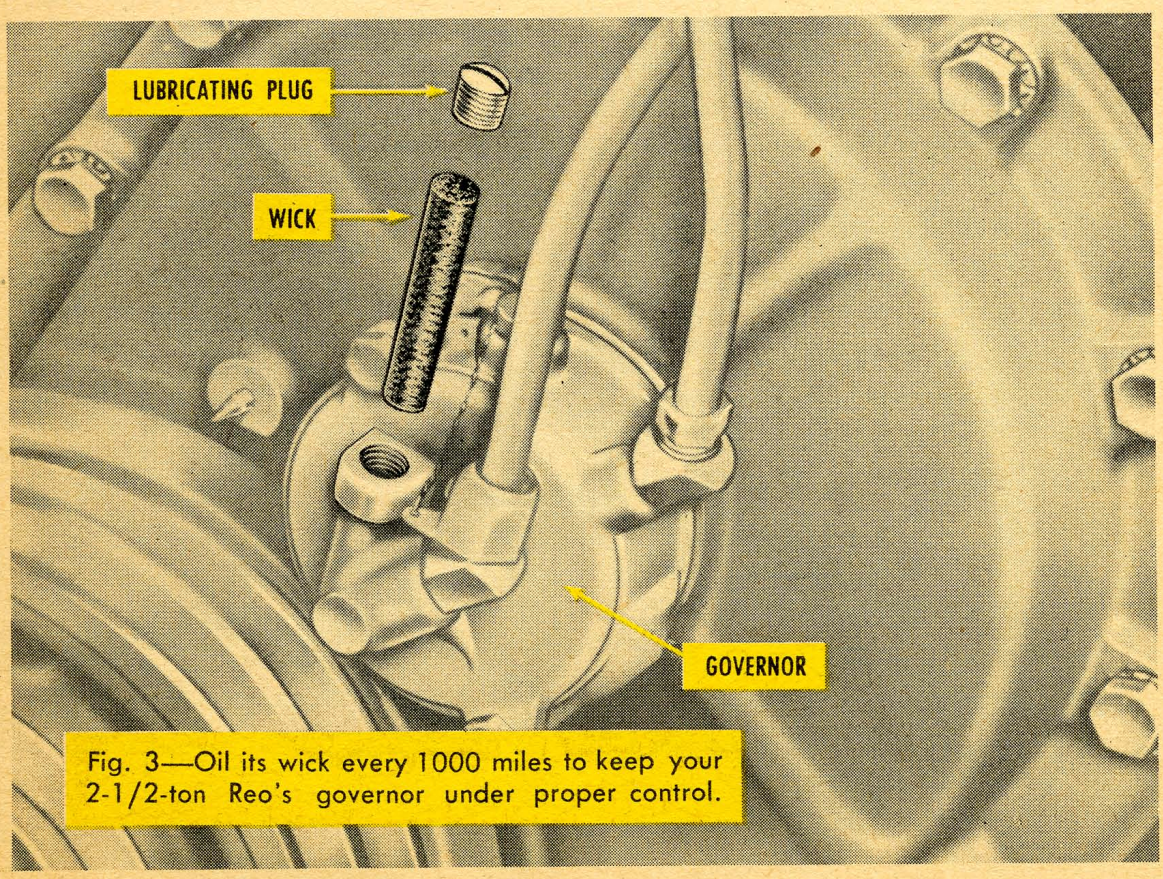
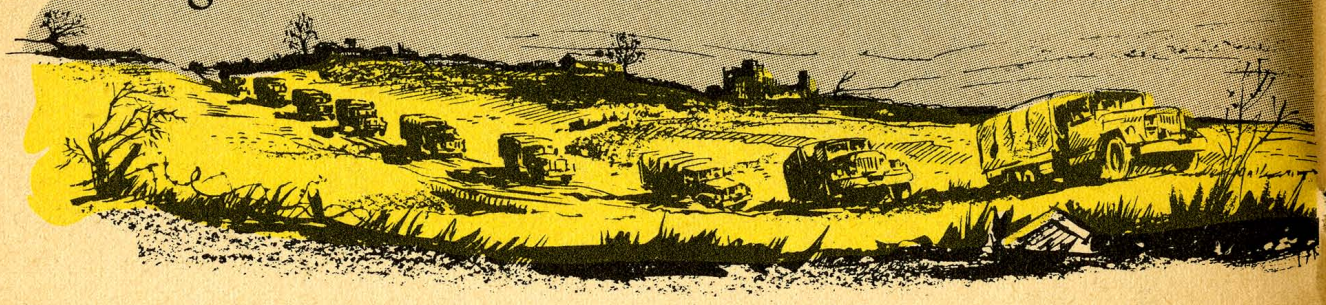


Fig. 3—Oil its wick every 1000 miles to keep your 2-1/2-ton Reo's governor under proper control.

Keepin' Body and Soul Together on the . . . GMC 2½-TONNER



A NEW SPEC +
A NEW LOCK =

GMC 2-1/2-TON SAFETY

The front brake backing-plate to steering-knuckle retaining-screw torque specs have been changed. Now those retaining screws (all 12 of 'em) need tightening a little more. The latest and proper torque is **30 to 35 foot-pounds.** So, out with your wrench and start torquing.

To keep them properly torqued and from working loose and maybe shearing off in the steering-knuckle support, lock'em in place.

Get some strap steel about 1/16″ thick and cut it and drill it like in Fig. 1. (You'll need 12 pieces to lock the retaining screws in pairs on both wheels.) When all set, you only bend one corner of the lock against the flat of the retaining screw (Fig. 2). If you have to remove the locks, instead of making new ones when you put them back on, just bend another corner against the bolt heads.

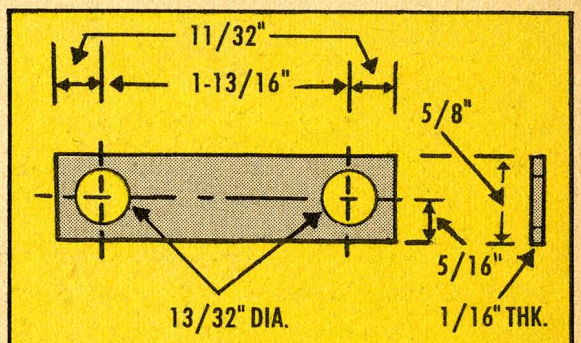


Fig. 1—This little piece of steel will lock those retaining screws in tight.

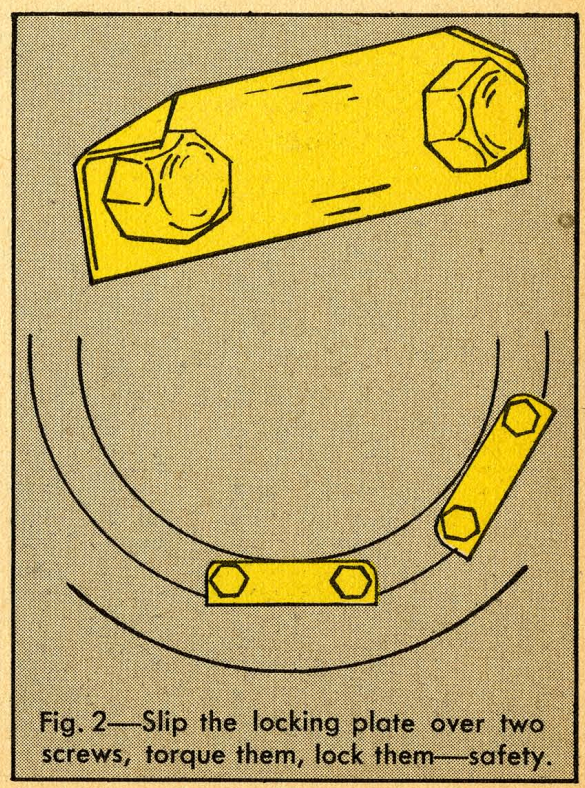


Fig. 2—Slip the locking plate over two screws, torque them, lock them—safety.

Keepin' Body and Soul Together on the . . .

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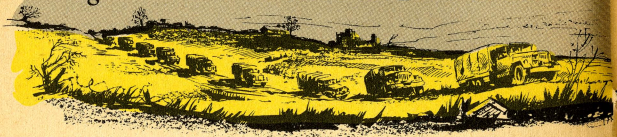

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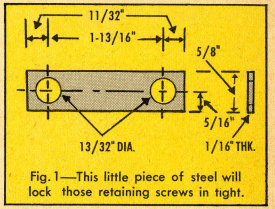

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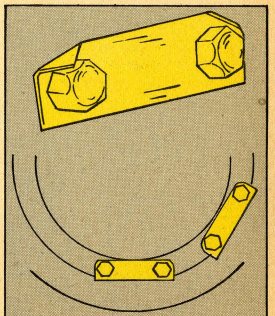

Fig. 2—Slip the locking plate over two screws, torque them, lock them—safety.

GMC AUTOMATIC TRANSMISSIONS

The wrong range worries the truck's transmission till it's ready for the psycho ward.

They're like the last Joe in the sack, on the second floor barracks, who drops one boot on the floor and keeps everybody awake wondering when he's going to drop the other one. It's those drivers who let the hydramatic 2½-tonners reach the critical downshifting stage in F-1 on an upgrade, and then let it run the scale in a shifting cycle, ripping down from 3rd to 1st and up thru 2nd to 3rd again, never actually settling on any ratio.

As you drive up a stiff grade in F-1 (either range) and reach a point where you can feel or hear a lot of fast, indecisive upshifting and downshifting in the transmission, the unit is "hunting." At this point, bud, you're in the wrong slot —you should be in F-2. Being in F-1 on a too-stiff grade telegraphs the shifting mechanism a lot of conflicting messages, and by the time it acts on one it gets another.

You're trudging up a grade which 2nd handles very nicely when the engine begins to pick up rpm's, and she shifts into 3rd. It rolls but a few yards until it discovers that 3rd just doesn't have it—so it automatically downshifts to 1st with a jerk—then to 2nd, and again it tries third—no good. All this "hunting" knocks the dickens out of the clutch, gears, and bands.

None of this would happen in F-2, for the transmission is held to 2nd speed, and it won't be hopping up to 3rd where you haven't got the power to keep the truck moving up the grade.

So, put her in F-2 in the first place. Transmission parts cost money.

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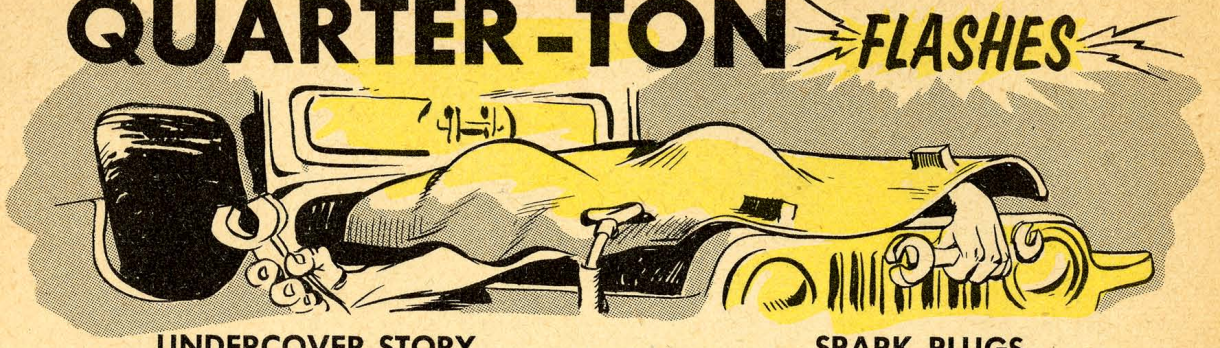
QUARTER-TON FLASHES



UNDERCOVER STORY

If you've got one of the early M38A1's and been hearing a tap-tap-tapping under the hood, it could be the rocker arms hitting the valve cover. The first batch of 'A1's came out with the covers set a little too close to the rockers.

Should you be tapped with the problem, loosen the cover and reposition it a little with the engine running. Then tighten it again when the rockers stop hitting the cover.

OPEN WIDE

Here's something a seasoned mechanic wouldn't do but his helper might:

Where TM 9-804, page 67, says to test compression on the M38 "with choke wide open," watch him for the new-comer's mistake. The man I mean thought he was following instructions when he pulled out the choke control-lever at the dash panel. The fact is he was letting less air in the carburetor, "choking" it.

To make the compression test, hands go under the hood to make sure the choke "butterfly-valve" in the carburetor is open all the way—giving it all the air it can get.

SPARK PLUGS

If you will look on page 26 of the new Ord 7 SNL G758, you'll find two spark plugs listed as optional equipment for the M38A1.

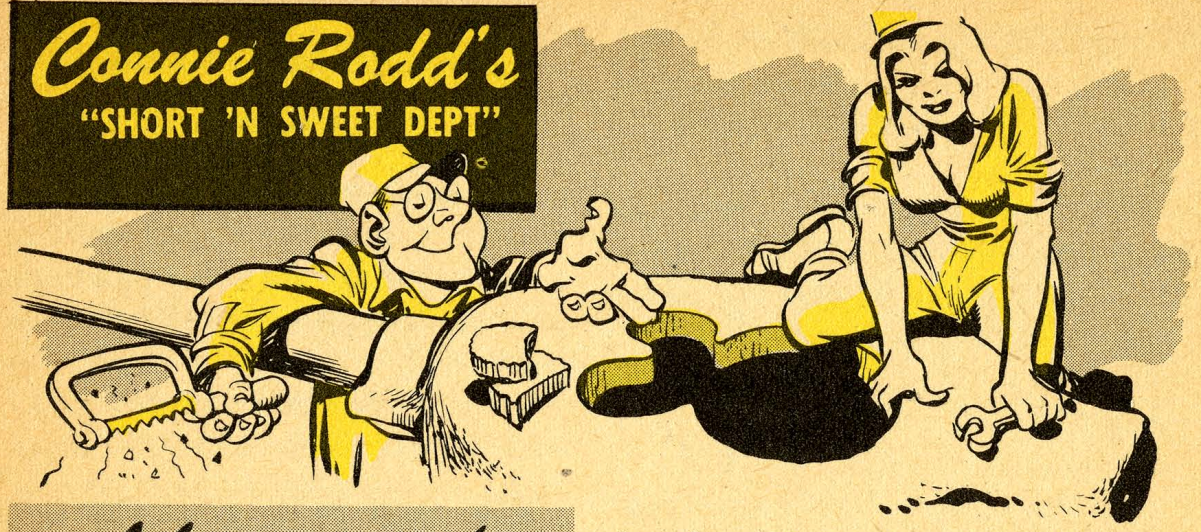
This has been changed, and the latest word is that spark plug H004-8357724 is the **only** one for the M38A1. Since this plug is also suitable for the M38, the latest dope from OCO is that the alternate plug, H004-7524258 will not be issued for your quarter tons. Point is, the H004-8357724 is a hotter plug, and has been found to work better in the F-head engine.

CHEAZY PEAZY—TAKE IT EASY

Take it easy with those M38A1 ¼-ton—105mm recoilless combinations. That 105, plus crew, equipment and ammo can be rough on your ¼-ton if you top it off with some low flying.

Right now, that type of combination wants special easy handling by the driver. Keep out of rough terrain where possible. Be a good idea to cut out unnecessary trips.

Connie Rodd's "SHORT 'N SWEET DEPT"



Lube power-pack mountings

Put a light smear of grease on the contact surfaces of power-pack mountings (guide-pins and guide-rails) when installing the power pack on the Light Tank family. You'll have easier sledding and less rusting.

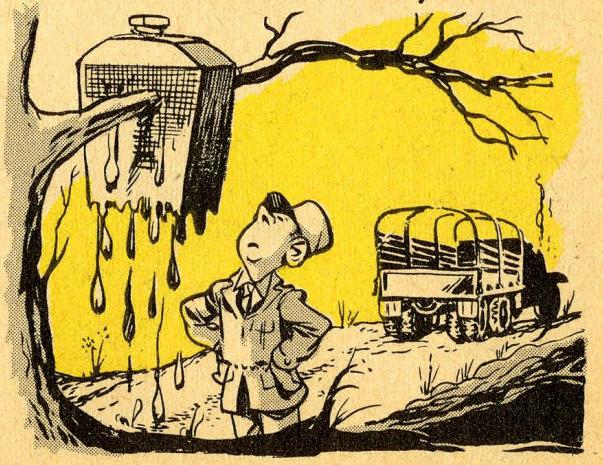
You need grease on the forward mount especially because the saddle has a tendency to stop before the power pack has completed its slide into forward position and, if the mountings are not fully seated when the power pack is secured, it'll likely come loose and cause engine vibration.

The mounts should always be free of paint and the power pack mounting-screws should be checked often—especially on the front engine-supports. They have a tendency to vibrate loose since they're not safety wired or locked. **Note:** Be extra careful to make sure your ground wire back at the transmission is grounding the power pack to the hull—grease on the mounting might interfere with the groundings.

Another Note: On the subject of mounts and good mountings, when you're installing the power pack it's a fine time to make sure that all mounts and mounting screws (especially the transmission) that should be safety-wired are safety wired correctly. Like it said in PS #13, page 568, a single strand of wire won't do the job.

Flex your radiator

Flexing motion of the radiator, when banging your 5-ton 6x6 truck over rough terrain, is mighty important. Without that motion, you can tear the stay-rod bracket loose from the upper radiator tank. And, a leak you'll have.

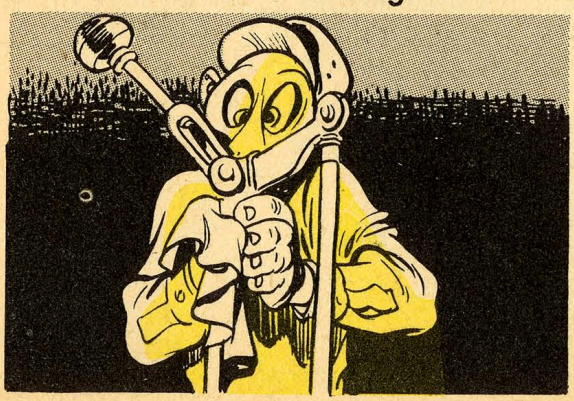


The proper adjustment of the self-locking nuts on the radiator mounting studs and the stay-rod will supply this flexibility.

When you adjust them, tighten the mounting-stud nuts up even and snug. When you get to the stay-rod nut be careful not to pull it up too tight so that you completely compress the spring on the stay-rod bracket at the upper radiator tank. Get it tight enough to hold the radiator snug. This'll leave enough spring to let the radiator flex when you hit the cow pastures.

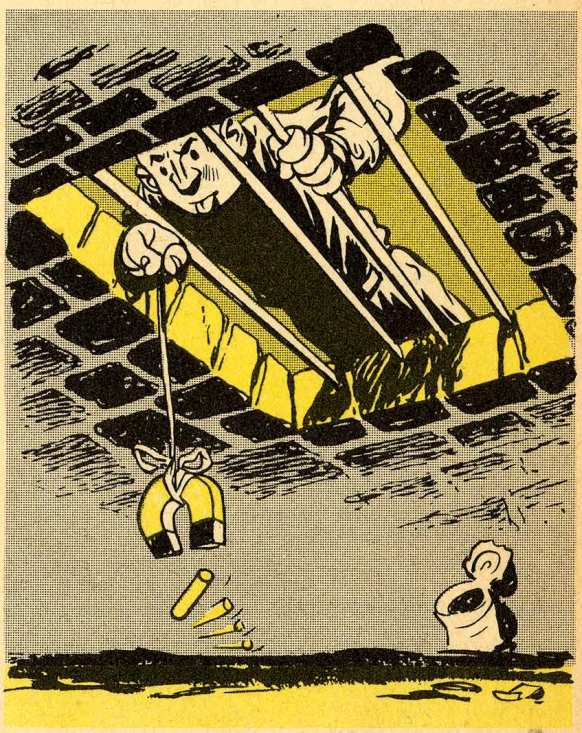
Rust in the shift tower

You can put an end to rust which crops up on starter, transmission and transfer linkage inside the shift tower of hydramatic 2½-ton 6x6 trucks. Get at the linkage by removing the shift tower, clean off any rust that has formed and coat the linkage with AXS-673, Rust Preventive Compound (Stock No. 14-C-507). You have to be careful about nylon bushings; they've already been lubricated—so, don't add more. Late models of your M135 and similar trucks have already had their linkage coated. You might take a peek into the tower to make sure no rust is forming.



Winch shear-pin replacement

Despite previous warnings, there are still some steel shear pins floating around. Remove the shear pins from your winch-equipped 2½-ton and 5-ton trucks, beg or borrow a magnet for yourself, (magnetic drain plug H002-0541516 will do the trick) and if you



can pick up the pins with the magnet –bury those steel pins. Replace with the aluminum-alloy type that'll shear when they're supposed to and save those transmissions and power-takeoff units.

All of your 2½-ton 6x6's now need the new-type shear pin G742-7368685, plus two cotter pins H001-4417141 per shear pin. All 5-ton 6x6's should now use shear pin G744-7409348, plus one cotter pin H001-4417425 per shear pin. Take a gander at TB Ord 532 (15 July 1953).

Dog clutch jaws

You may have trouble from the dog-clutch jaws on trucks equipped with winches when you try to release the clutch with a load on the drum.

If you try to move the drum-clutch lever and it resists, put the power-take-off in reverse and back off the winch just enough to take off the strain. The Joes who pound and kick the drum clutch lever should be kicked in the pants. They'll bust up the winch works.

Of course, you can't relieve the pressure of a suspended load by backing off.

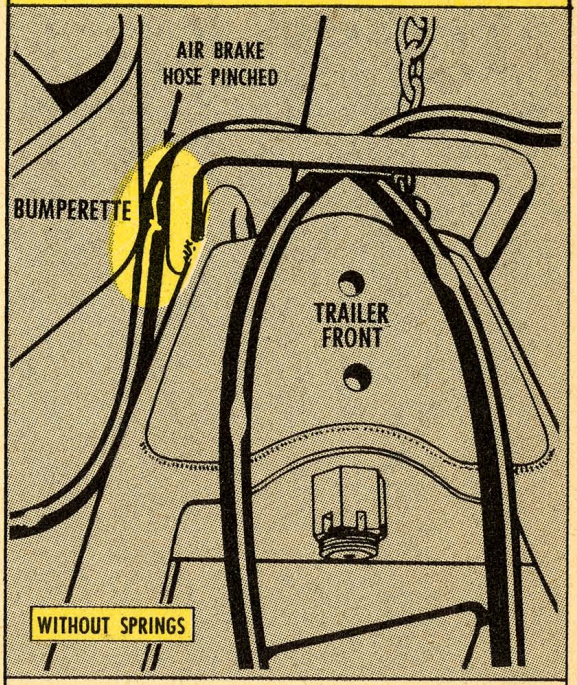
Suspension oil

M41, M41A1 (T41E2), M42, M75, M8E2, T98E1, T99 & T194

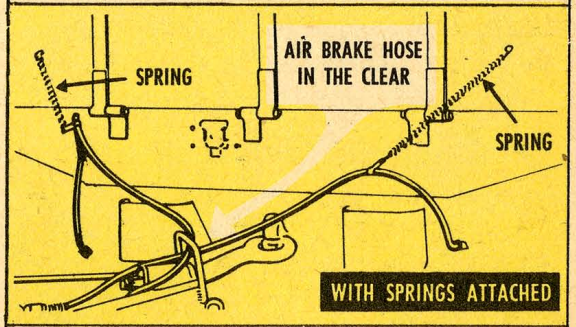
Light-Tank family members take note . . . OE 10 is the recommended oil to be used in all suspension-bearing reservoirs in temperature ranges above −10° F, and OES in temperatures below 0° F. It's the same as used in the transmission.

Dig out your copy of PS #14 (T41E1 issue), and fill in the blank space on page 612. And if your vehicle LO and TM says anything different, straighten them out, too.

Keep trailer air-brake-hose out of a "squeeze"



Note what happens to air-brake hose when caught between the bumperettes of a truck and the forward part of a trailer. Result: A broken hose and a trailer load of ammo playing leap-frog with you when you try to hold it on a hill.



Fix it quick with two springs hooked to the body of the truck and attached to the hose so it will be held above the "squeeze". The springs are Stock No. G671-7001762 (tractor-to-trailer connecting-hose spring.) You'll need two per truck.

Human element vs. *cracked windshields*

Let's face it, chum—windshields may crack when gasoline heaters are turned up high for a quick tootsie warm-up on a cold (brass monkey type) day in a vehicle that has been frozen stiff from being out in the elements.

That windshield is made of two pieces of glass sandwiched together. When you give the inside slice of glass a sudden blast of hot air, it expands before the outside slice knows what's happened—and "pop" goes the windshield.

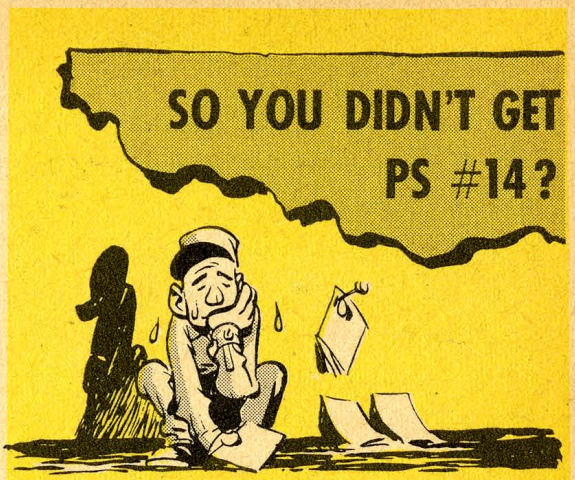
Take it easy when warming up your cab. Turn the heater on low first. After the cab is warm, you can turn it higher. That way it's better for you and everything else. And keep the hot blast of defroster air off the windshield until the cab's nice and warm. That way the outside half of the windshield will have a chance to warm up, and there will be less popping of glass.

About-face (in winter)

Here's a trick to keep your engine warm:

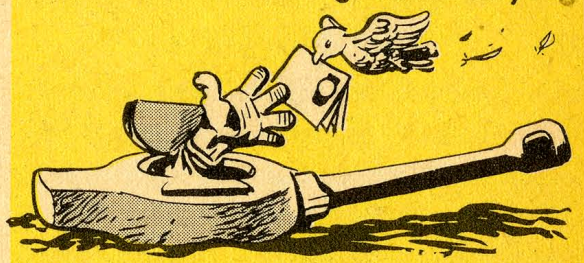
"When halted for short shutdown periods, the vehicle should be parked in a sheltered spot out of the wind. If no shelter is available, it will be helpful to park so that the vehicle engine **does** face into the wind", according to TM 9-819A (paragraph 50 b, page 47).

What it meant to say is **"does not".**



Mebbe it was on purpose... because PS #14 is being hoarded for guys who **really** need it (it's all about tanks T41E1 and T41E2 and other members of the Light Tank family). So just mark the gap in your file: "Bulldog Edition."

But, if you work around a Light Tank and got overlooked during your regular publications mail call... or if you've worn to a frazzle all the copies you got... or whenever you do come in contact with the Light Tanks... get a letter off right away to **PS Magazine, Aberdeen Proving Ground, Maryland.** If you tell how many you need (and don't forget to send your complete military address), PS #14 will be fired right back at you.



But, puh-leese... be sure you're one of those who've gotta be in the know about the Light Tanks so PS can spread the word where it'll do the most good.

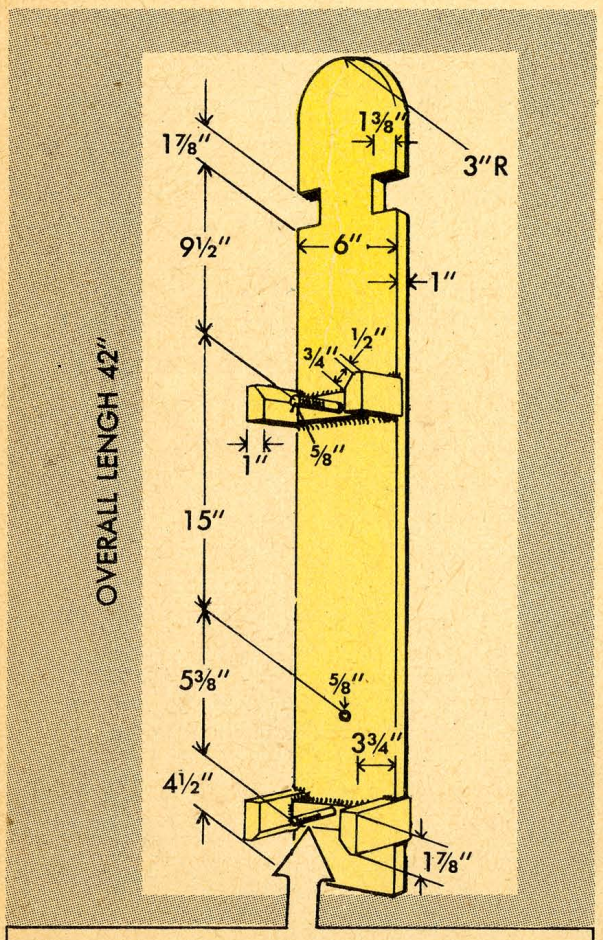
Dear Editor,

Here's what we did at our tank yard to relieve the backaches involved when adjusting tank tracks. We'll let the enclosed snaps speak for themselves . . . it's a combination of good old army ingenuity and scrap metal. How about getting your Ordnance support unit to give you a hand in making this?

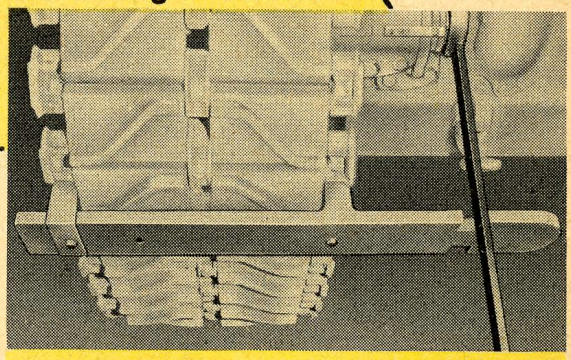
The Ordnance Gang at Fort Sill

Snappy Snaps for a TRACK ADJUSTING TOOL

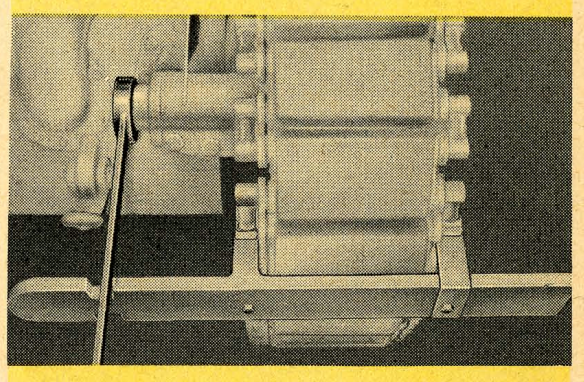
This is the gismo that's saving our backs. It can be made to fit almost every type track. The specs will tell how it's made and just how much scrap metal you'll have to scrounge.



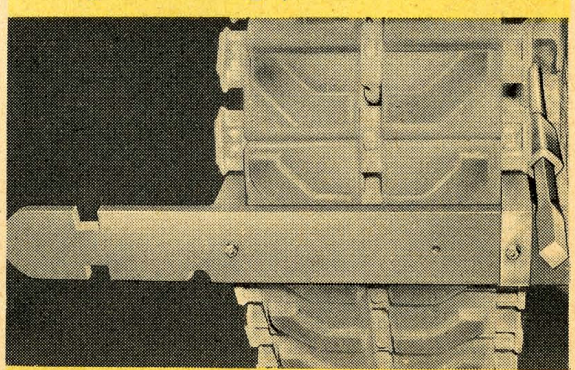
Make this so it'll slide over to the inner ⅝" hole so the bar can be used on narrow tracks.



Here's how adjusting bar works on the M4A3 Tank with the wide steel track using tool 41-W-640-400. (The wide rubber track on the M43 Motor Carriage works like this, too.)



And here's the way it's applied to the M4A3's that have the narrow rubber track (requires moving the outer grip into the inner hole.)



The M47 will take it, too . . . with a notch at the other end for wrench 41-W-3250-875. (Wrench 41-W-1436-25 also works on M47.)

PUT THE WHOA ON LITTLE JOE

If you wonder why the auxiliary engine in your M47 tank sometimes takes off like a mule in the last row of a cotton patch, here's your answer and here's how to bridle the varmint.

On the Wisconsin "Little Joe" job, the trouble comes from the governor-to-carburetor linkage binding. She's supposed to whirl at the rate of 2800-rpm with a full load output of 150 amps, and at 2900-rpm without a load.

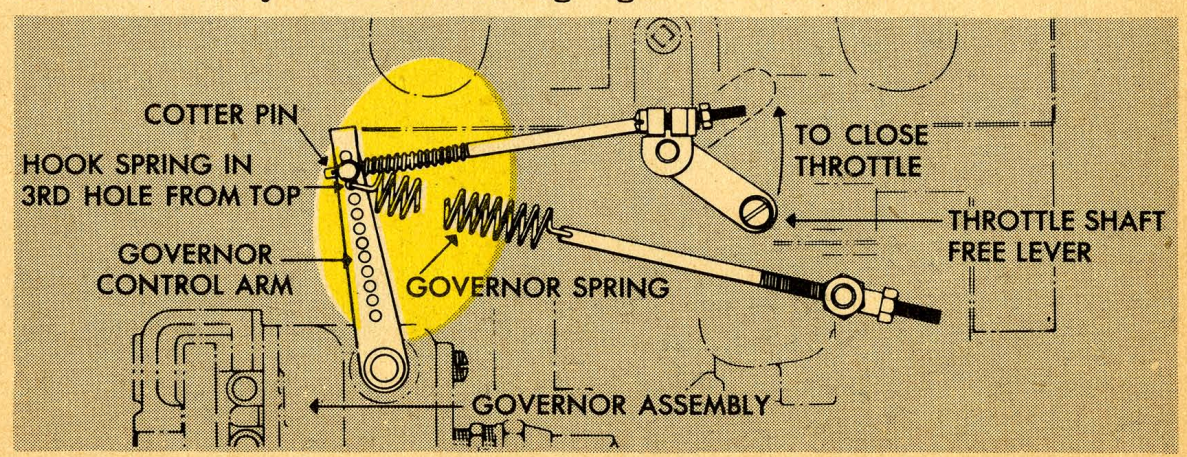
What happens is this: The throttle is opened wide for a full load. When the load is taken off, the governor is supposed to reduce speed by partially closing the carburetor. The governor arm moves to change the carburetor, but the carburetor linkage doesn't respond.

Result: The engine runs like mad and is likely to bust something. Such high speed is especially harmful when "Little Joe" starts cold. Oil doesn't reach all parts and those parts take a beating.

The easiest way to get her controlled is to adjust the linkage so that the cotter pin on the linkage barely touches the governor control arm. Hook the governor's tension spring in the third hole from the top of the governor-control arm. The linkage will then move immediately when the arm moves to close the carburetor (see illust.).

If you still have trouble with this set-up, you better check for bent linkage or rust or dirt on the linkage. Take a look at the ground cable from the auxiliary-engine generator. Sometimes it will be in the way of the governor linkage.

Now "Little Joe" should purr along smooth and steady. You've got him bridled.



a quick switch

CURE FOR BATTERED FUEL LINES

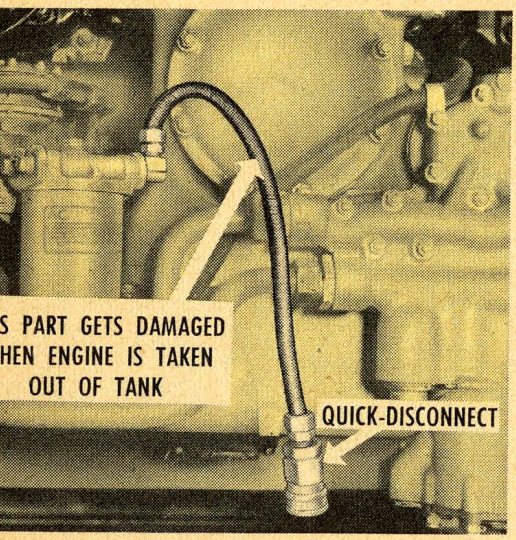


Fig. 1—Some tanks have the main fuel-line on engine with quick-disconnect like this.

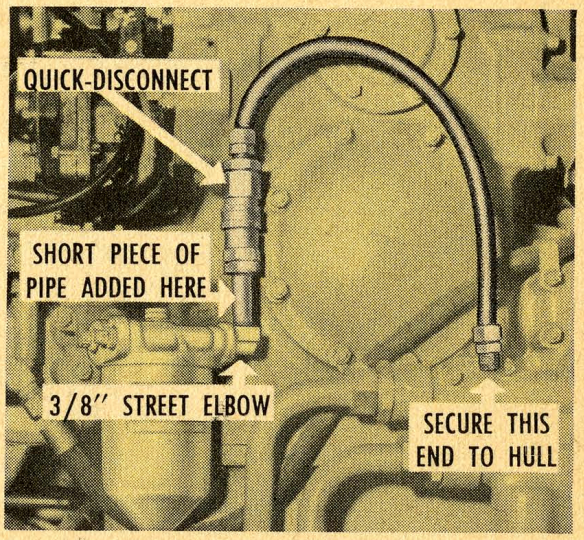


Fig. 2—Avoid battered lines by reversing the quick-disconnect and adding a 3/8" elbow.

Those battered main fuel-lines in the M46, M46A1 and M47 tanks can be cured—but quick.

Some of these tanks came off the lines with the quick-disconnect at the fuel-tank end of the fuel line (Fig. 1). When the engine is pulled out the dangling fuel-line often gets damaged and fuel lines have been hard to replace.

The cure comes by taking the fuel-line loose at both ends, putting a 3/8" street elbow in the engine connection, reverse ends of the main fuel-line and connect it (Fig. 2). This puts the quick-disconnect on the engine where it can be taken loose fast and placed out of the way when the engine is to be pulled (Fig. 3).

Some tanks have this quick-disconnect feature built in.

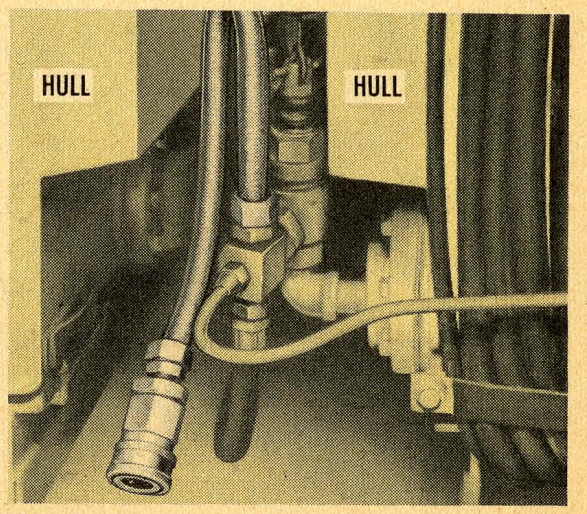


Fig. 3—Now, you tuck the main fuel-line away when removing the tank power-pack.

"It's your skin, save it."
Learn this real cool way to...

AVOID HOT OIL TREATMENTS

CROSS-DRIVE TRANSMISSIONS

Dear Half-Mast,

We have noticed that some tankmen once in a while overfill their CD-850 transmissions in M46, M46A1, M47, T43, M48, T97, T108, and CD-500 transmissions in the M41 (T41E1), M41A1 (T18E2), M42, M8E2, T98E1, T194, M75 (T18E1) vehicles. The only method we have read for reducing the oil to correct level is to remove the inspection plates from underneath the tank and remove the transmission drain-plugs. Generally, much of the oil is lost that way.

ier way, and we don't waste oil. Besides, we don't get a hot oil bath. Here is the way it works:

1.. Stop the engine.

2. Remove a lubrication - check plug from the transmission valvebody. Use the plug where you have the lowest oil pressure—the lubricating oil line plug. The illustrations below show the lubricating oil-line plug location—Fig. 1 is for the CD-850 transmission plug; Fig. 2 gives you the CD-500 spot.

3. Insert in its place a draining fixture made of brake hose from GMC M135 or equivalent, a shut-off valve, a 1/8" flare connector,

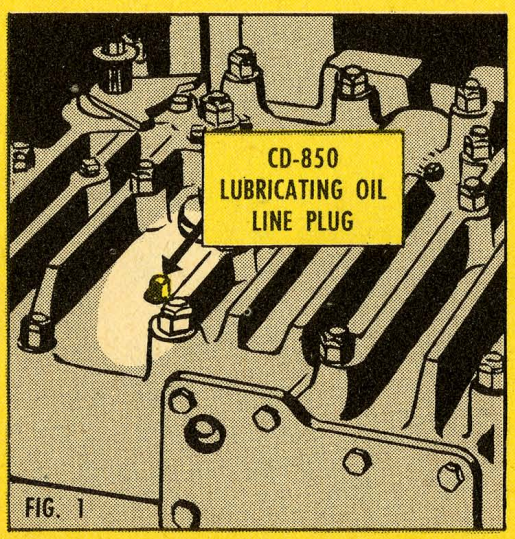


FIG. 1

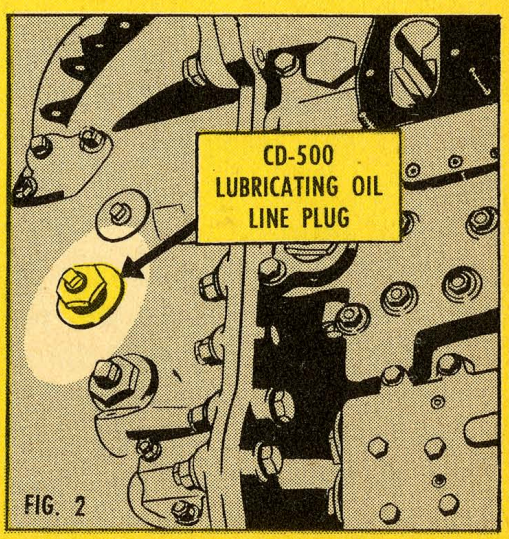


FIG. 2

two or three feet of ¼" copper tubing and a flare nut. Be sure the hose you use has pipe-nipple threads on one end and the ⅛" flare on the other for proper connections.

4. Screw one end of the brake hose tight into the lube check opening. Attach the cut-off valve to the other end, and tie the valve to the copper tubing with the ⅛" connector.

5. Be sure the shut-off valve is off before starting the engine.

6. Start engine, warm transmission to operating temperature, open valve and drain off excess oil. You can turn off valve and check the oil level with the oil-level gage as often as you like while the engine is running at 1000-rpm.

7. When the correct oil level is attained, stop engine, remove the draining fixture and install and tighten lube plug. Check for leaks. Do not tighten too tight because the plug is made of cast aluminum. You're apt to damage it.

Different kinds of fixtures can be made, depending on what is available in your shop.

The Ordnance Gang

Dear Gang,

Sounds like a fine idea, but it has its dangers. Never use this method to completely drain the transmission. You will ruin a transmission quicker than it takes to sign a statement of charges.

When draining off excess oil this way, be especially careful because it's scalding hot (260°) and you can get an extremely bad burn.

It might be a good idea to put the end of the tubing in a bucket to keep the oil from squirting and splashing.

Another good plan is to set the plug you have removed somewhere on the transmission (find a niche or groove so it won't vibrate off while the engine's running) during the draining operation. This way, you can keep the plug hot. A cold plug replaced in a hot valve-body can give you a hard time removing it later on.

On CD-850 transmissions, another method of removing excess oil is by using a spare crankcase oil-breather vent-line with a 90° elbow (connects on the carburetor) and any cut-off valve that will fit this line. The engine is stopped, the elbow is fitted in place of one of the transmission oil-plugs on the oil cooler, and the line and cut-off valve are attached. The engine is started and the operating temperature brought up to normal. Excess oil may be drained off and the oil level checked while the engine is operating. When the correct level is reached, the engine is stopped, the elbow and tube are removed, and the plug is replaced.

Half-Mast

Tank Talk

ON DIPSTICKS AND BREATHERS

Engine Dipsticks

In your Continental AV-1790-series tank-engines, the engine oil dipsticks come in two different sizes—one short, one long. But get them two miles apart and you can't tell the difference. Unless you know which is which and where it belongs, you might end up with an oil level reading that's all wrong—one engine running low and the other overflowing oil.

Here's how to keep the long stick out of the short hole:

AV-1790-5A engines and AV-1790-5B engines through Serial No. 2556 have the dipstick housed at the rear (flywheel end) of the right bank of cylinders—use the short dipstick.

AV-1790-5B engines **after** Serial No. 2556, AV-1790-7, and AV-1790-7B engines have their dipsticks housed along about the middle of the engine (between #2 and #3 cylinders on the right bank) —use the long dipstick.

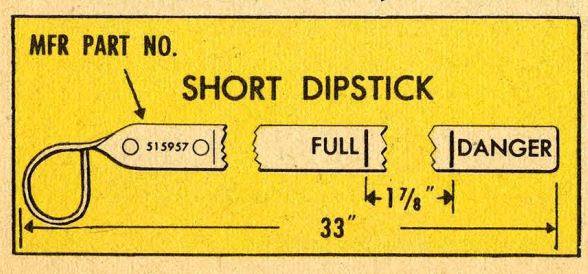
You can tell the short from the long by the Manufacturer's Part Number on the dipstick and by the 3″ difference in length.

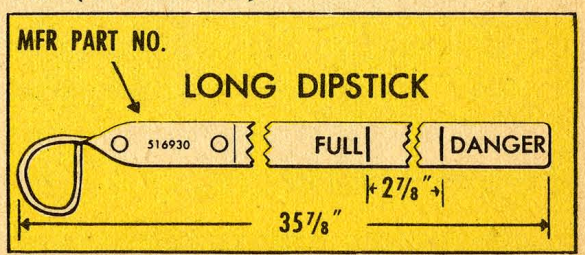
This change in dipsticks isn't spelled out by engine serial number in your SNL's. How about marking each short dipstick with an "S" and putting an "S" by the hole where it belongs. Use an "L" for the long ones.

Engine Breathers

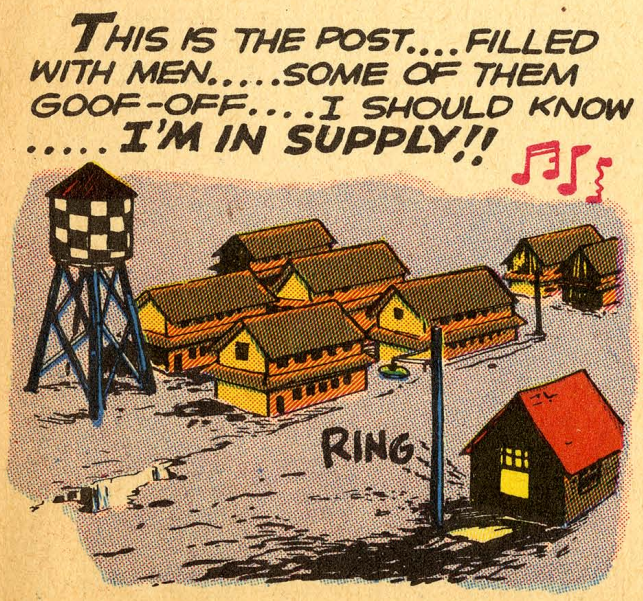
If your M46 tank belches great smoke rings on a steep climb, the chances are that its indigestion is due to an out-of-date crankcase-ventilation assembly. First models of the Continental 5A engine had a breather assembly that didn't breathe so good, which is especially bad when the enemy's watching your smoke.

A new breather assembly is well on its way so don't be an old smudge pot—ask Ordnance to see if you have the old or new assembly. Refer them to MWO Ord G244-W-15 (5 Nov. 52).





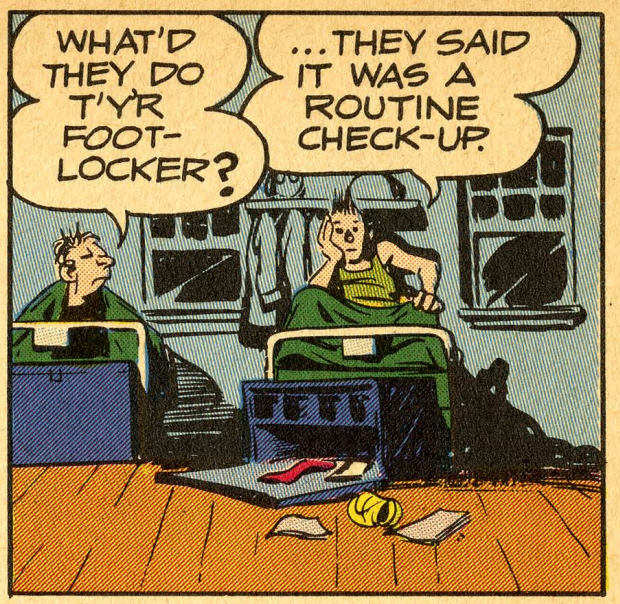
JOE DOPE
HOW FREE-TURN-IN WORKS
HAIRNET
TA TA-TA--- TA
THE STORY YOU ARE ABOUT TO HEAR IS TRUE.... EVEN THE NAMES HAVE BEEN KEPT TO PROVE YOU AIN'T INNOCENT.
RING
RING

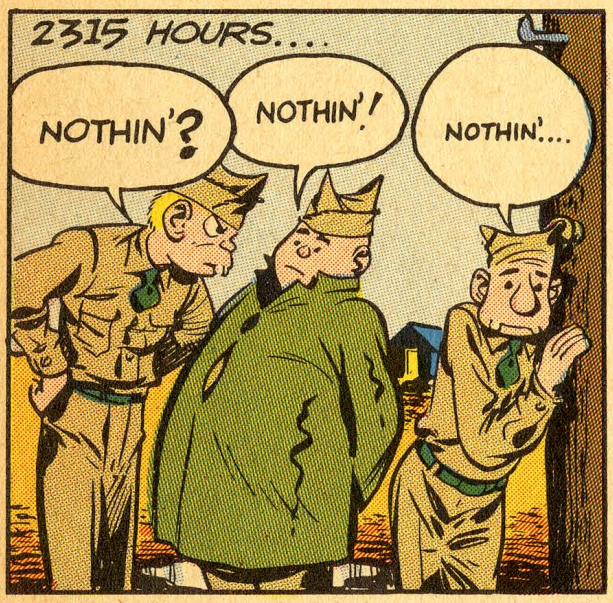

THIS IS THE POST....FILLED WITH MEN.....SOME OF THEM GOOF-OFF....I SHOULD KNOW .....I'M IN SUPPLY!!
RING

IT IS FRIDAY 1630 HOURS....I AM C.Q. WORKING THE ORDERLY ROOM OUT OF SERVICE COMPANY.
MY PARTNER'S NAME IS JOE DOPE...THE BOSS IS COL. FLINTY MY NAME'S FOSGNOFF.
HI!
HI!

1832 HOURS...
RING
RING
RING
CHARGE O' QUARTERS, SERVICE COMPANY PRIVATE FOSGNOFF SPEAKIN'.
YEAH... ???
YEAH! ???
LATRINE RUMOR, AN I+I TEAM'S GONNA MAKE A SPOT INSPECTION FOR UNAUTHORIZED PARTS TOMORROW!
SO?
...SPARE PARTS SHORTAGE IN 'A' COMPANY...SIX VEHICLES ARE DEADLINED!
...OUR JOB... FIND THEM PARTS!
RRUMBLE
CRASH
BOOM
PRIP-PITTER PATTER
DRIP
DRIP
PITTER PATTER
DROP
1945 HOURS...WE HAD CHECKED ALL THE REQUISITION FORMS OF 'B' COMPANY OF THE PAST SIX MONTHS....
FAR MORE ORDERED THAN NEEDED!
YUP!
1951¾ HOURS...WE BEGAN OUR SEARCH IN THE SUPPLY ROOM, BACK OF THE 3RD ECHELON SHOPS.
EXTRY PARTS? WHY MAN WE GOT JUS' ENUF TO GET BY!
HIS SHELVES ARE CLEAN!

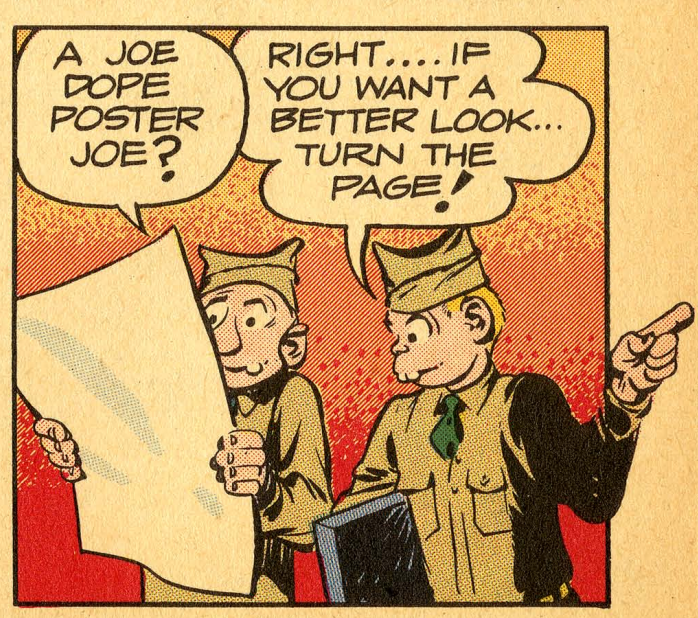
2253 HOURS, WE TRIED ANOTHER ANGLE....
WHAT'RE YOU GUYS DOIN' HERE AT THIS TIME OF NITE ???


WHAT'D THEY DO T'Y'R FOOT-LOCKER?
...THEY SAID IT WAS A ROUTINE CHECK-UP.


2315 HOURS....
NOTHIN'?
NOTHIN'!
NOTHIN'....

2333 HOURS...WE WERE BACK IN THE ORDERLY ROOM.
JOE...I'M SURE OF IT...THESE GUYS OVERSTOCKED AND THEY AIN'T TALKIN'!
ONLY ONE THING TO DO, FOS!

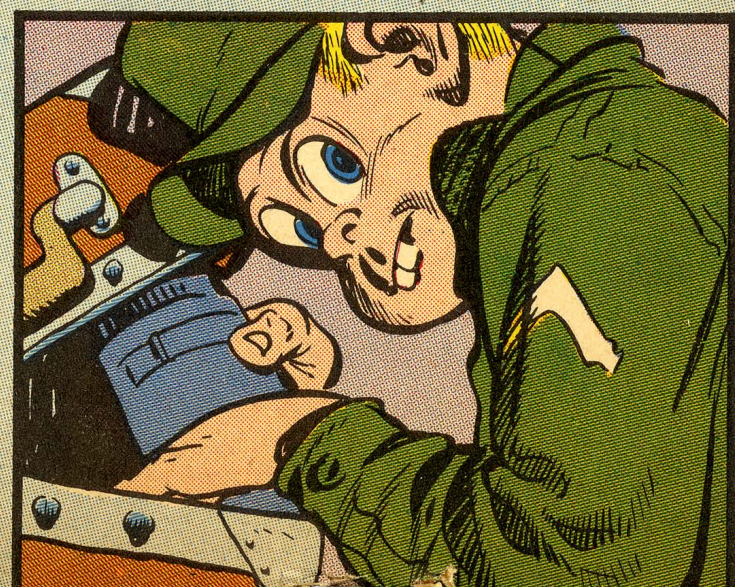
PUT THIS SIGN OUT FRONT ON THIS BUILDING....
TURN-IN POINT
ALL SURPLUS ORDNANCE EQUIPMENT
NO QUESTIONS ASKED


A JOE DOPE POSTER JOE?
RIGHT....IF YOU WANT A BETTER LOOK... TURN THE PAGE!

WANTED

JOE'S Dope Sheet

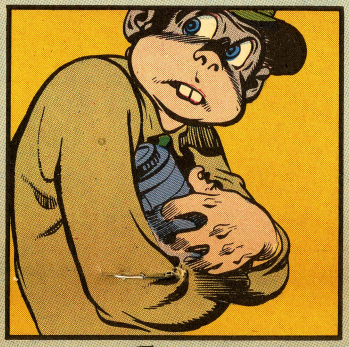
SPARE PARTS

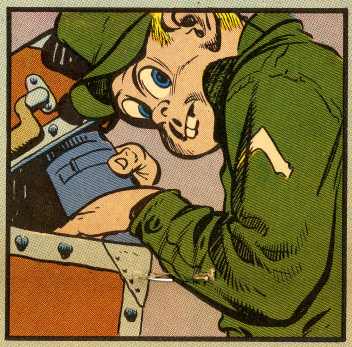


WANTED

JOE'S Dope Sheet

SPARE PARTS





For them who ain't yet heard the news
Free turn-in's a system you'll choose
Bring in parts that you've cached
There'll be no questions asked
F'gawsakes, you got parts we can use.

REWARD

FREE TURN-IN HAS BEEN AUTHORIZED TO MAKE IT EASIER FOR YOU TO TURN "UNACCOUNTED-FOR" PARTS BACK INTO CHANNELS WITHOUT A LOT OF PAPER WORK AND RED TAPE... USE IT, IT'S FOR YOU.

THIS ALSO INCLUDES UNSERVICEABLE EQUIPMENT WE CAN SALVAGE.

WE HAVE THE WORLD'S BEST EQUIPMENT... *Take care of it*

PRODUCED UNDER SPECIAL LICENSE TO U. S. DEPT. DEFENSE COPR. 1954 WILL EISNER PRODUCTIONS

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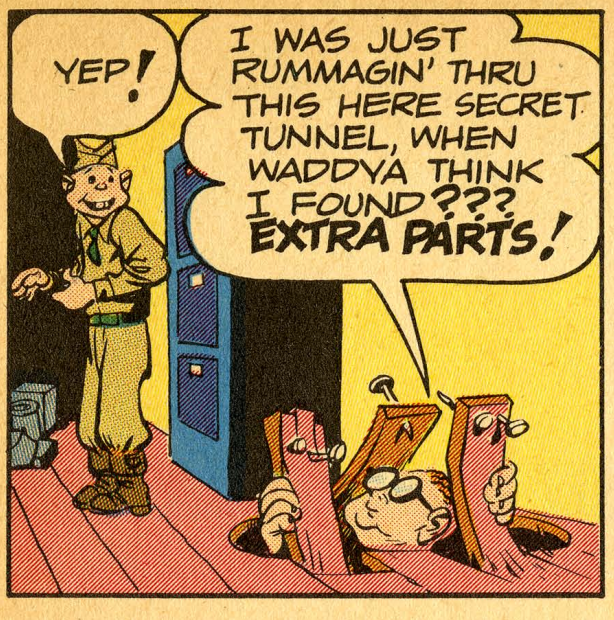
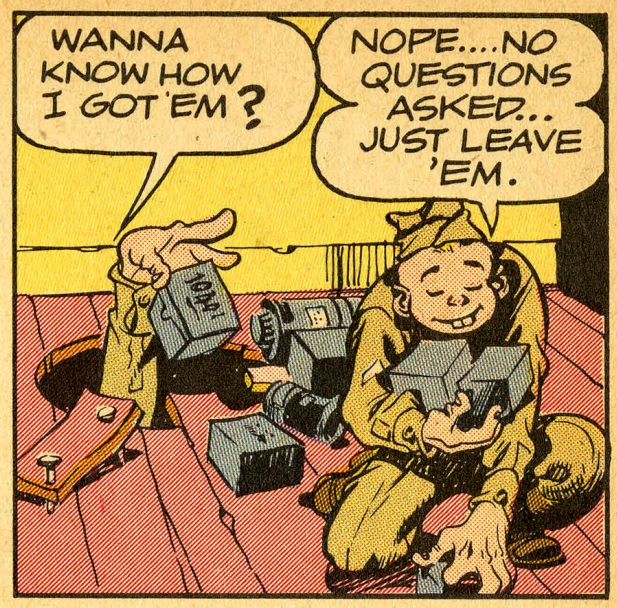
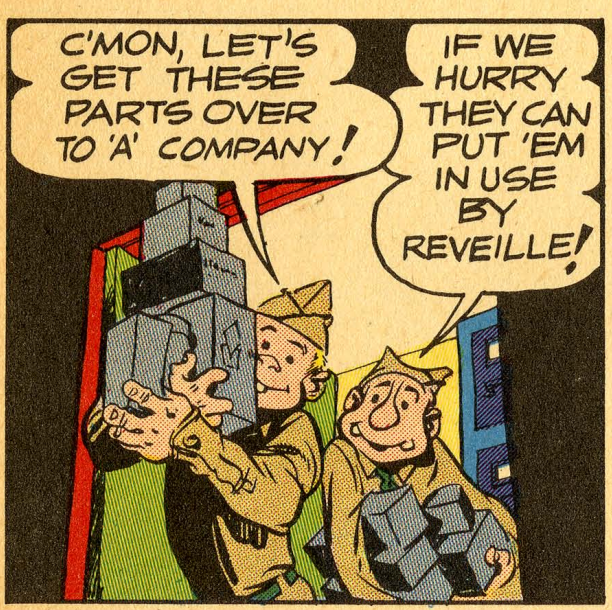
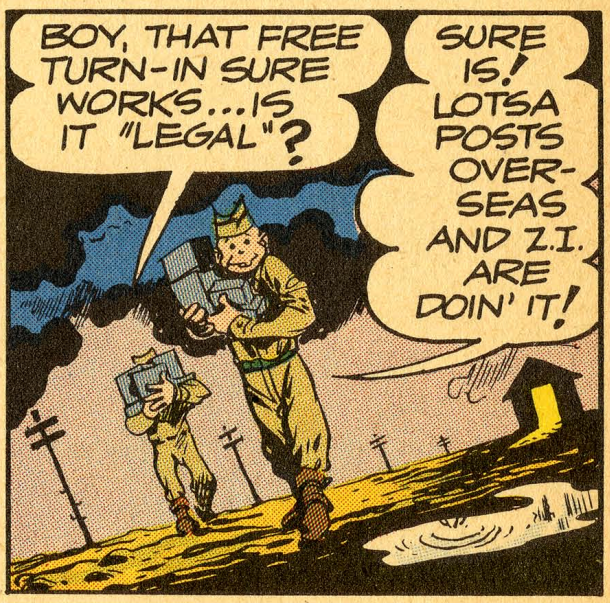
2357 HOURS... WE WERE ON STAKE-OUT IN THE ORDERLY ROOM. THERE WAS A KNOCK ON THE DOOR....
EVENIN'...
EVENIN'...
...THIS A "FREE-TURN-IN STATION"?
YEP!
DOES IT MEAN IF I TURN IN EXTRY PARTS WHICH... ER.... MAY HAVE ESCAPED MY NOTICE.... NO QUESTIONS ASKED ???
YEP!
NO PAPERS TO SIGN ??
NOPE!
WELL THEN....
...THIS A "FREE-TURN-IN STATION?


YEP!
I WAS JUST RUMMAGIN' THRU THIS HERE SECRET TUNNEL, WHEN WADDYA THINK I FOUND??? EXTRA PARTS!


WANNA KNOW HOW I GOT 'EM?
NOPE....NO QUESTIONS ASKED... JUST LEAVE 'EM.


C'MON, LET'S GET THESE PARTS OVER TO 'A' COMPANY!
IF WE HURRY THEY CAN PUT 'EM IN USE BY REVEILLE!


BOY, THAT FREE TURN-IN SURE WORKS...IS IT "LEGAL"?
SURE IS! LOTSA POSTS OVER-SEAS AND Z.I. ARE DOIN' IT!

I'M TOLD THAT AT SOME POSTS A WHOLE TRUCKLOAD OF SPARE PARTS WERE RECOVERED THIS WAY.

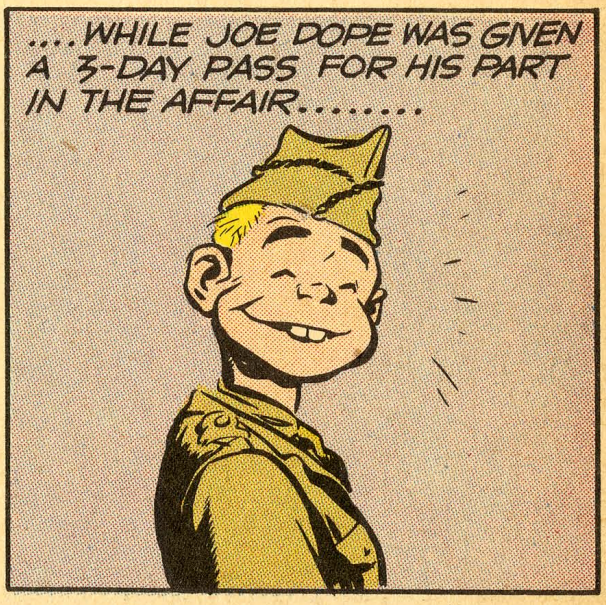
...ON SATURDAY, 1107 HOURS, AN INSPECTION WAS HELD ON THE POST, CITY AND COUNTY, OF LOST AXLES..... IN A MOMENT THE RESULTS OF THAT "TRIAL".....
TA
TA-TA
TAAAAA
MEANWHILE...
A WORD FROM OUR SPONSOR

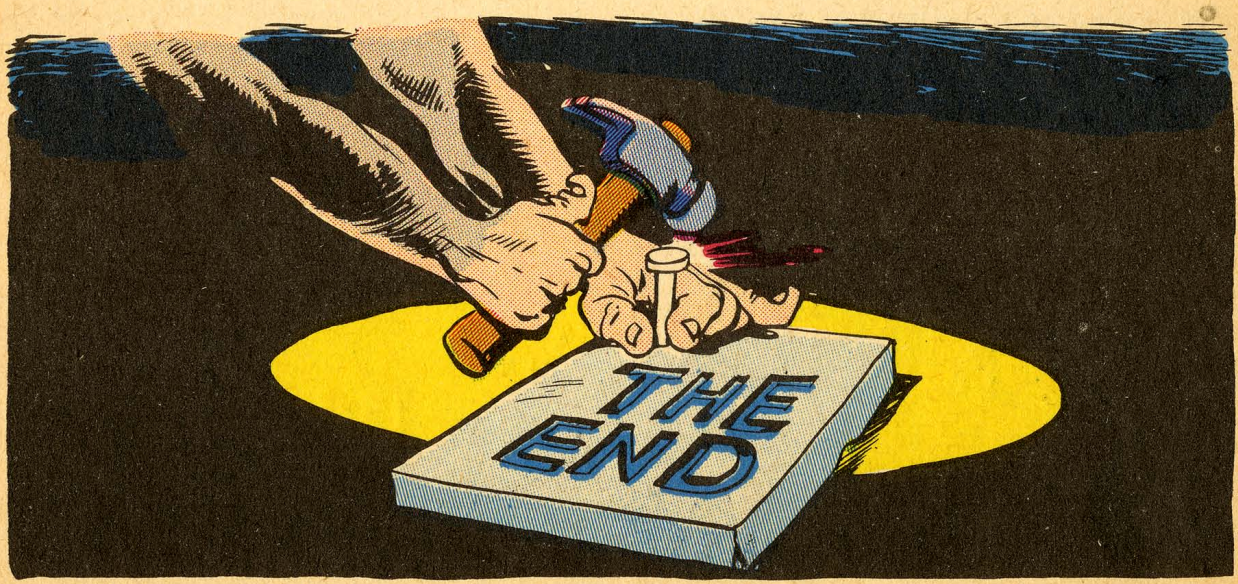
ARE YOU GUILTY OF OVERSTOCK?

MAKE YOUR INVENTORY AND STOCK CONTROL CARDS KISSING SWEET

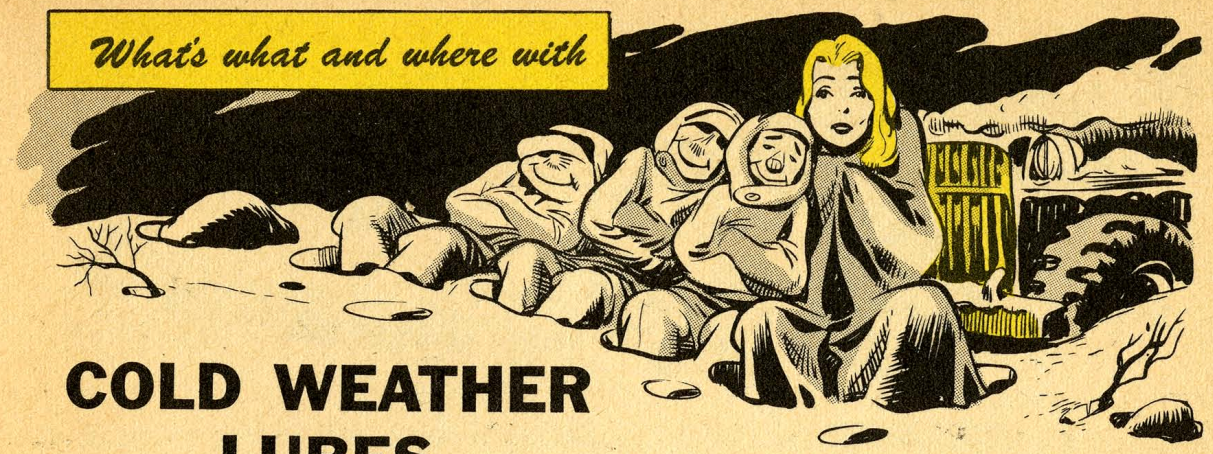
USE FREE TURN - IN

IT'S AUTHORIZED





What's what and where with



COLD WEATHER LUBES

Shucks, fellas, long-winded tales about extra cautions for lubing in cold weather is like telling how slow molasses pours on a cold morning. What's got some guys in a spin is the overlap of temperature ranges in the LO's for using different grade lubes. If you'll look close, you'll note that the LO's made up for "expected temperatures," and that's where you've got to use your ol' noggin.

So—if you have OE 30 in your crankcase and it's 35° F, and you know it's going to get colder for a stretch—switch to OE 10. But, if it's going to stay the same temp or get warmer—leave in the OE 30. In zero weather this could mean go or no go for your hack. If it's going to get colder, change quick to a sub-zero lube; your LO doesn't want you to wait till it hits – 10° F.

Winter weather differences around the world is confusin' too—some joes think the season itself tells 'em to switch lubes. T'isn't so—if you and your truck are wintering in the Louisiana bayous, you probably won't change to a cold weather lube. It's the expected temperature that counts—and when in doubt, use the next lighter weight lube.

Here's a guide to winter temps in various areas and the lube type you'll need:

For areas like:	Temperatures	Lubes to use	Remarks
The frigid North: Alaska, No. Can., etc.	Arctic Temp. (–10° to –65° F)	OES; GOS; HBA; OHA; GAA; PL (Special)	In this clime, keep TM 9-2855 handy.
The shiverin' North: Minn., Mont., etc.	Extreme Cold (–0° to –20° F)	OES; GOS; HBA; OHA; GAA; PL (Special)	These use the same lubes as the Arctic.
The middle belt: Kansas, Ohio, Maryland, etc.	Normal Winter Temp. (–10° to +40° F)	OE 10; GO 75; HB; OHA; GAA; PL (Spec)	Change ahead of the cold weather.
The sunny South: S. Calif., Fla., La., etc.	High Winter Temp. (32° to 70° F)	OE 30; or 50; GO 90; HB;OHA;GAA;PL (Med)	You probably won't need cold lubes here.

And as for getting the lubes, dig up a copy of SB 38-5-3 (Oct 51) —it covers the lube situation pretty well, stock numbers and all

M211 SHIFTS

Dear Half-Mast,

I would like some information on the hydramatic transmission on the new GMC 2½-ton 6x6 M211.

We have a little disagreement as to the forward shifts in F-2 High Range. One man says there are two speeds and I have driven two different trucks and have got four speeds out of both, but only down a grade as the governor won't permit you to get but two on level ground. The governor takes hold in F-2 at about 20-mph and at about 22 to 23-mph the shift to third occurs, then you hit fourth at 37 to 38-mph. **Note:** *This is done in F-2 Hilly high range from a dead start.*

We would like to know who is right as soon as possible.

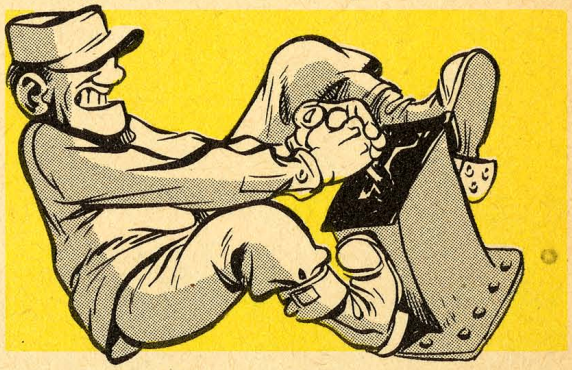
Pvt C. E. R.

Dear Pvt C. E. R.

Look chum, about this little argument on the shifting of the M135 and M211 transmissions. You are in the unhappy position of winning the Pyrrhic argument by losing the truck.

What I mean is this, the transmission will **only** shift 2-3 and 3-4 in F-2 when your engine has been forced **way** above its governed speed. So—for the luvva-pete, puhleeze quit trying to do it. If you drive that truck the way it is supposed to be driven in F-2, throttle on hydraulic will keep it from shifting to third.

Of course, if you are running in fourth gear at the time you shift to F-2, like when you see hills ahead of you, it will stay in fourth until the hill slows it down. But any time it shifts up from second to third while in F-2, something is very wrong. It could be the wrong linkage adjustment—or you.



I know that you use F-2 to get compression braking from your engine, but you want to use your head and your brakes too, and keep your engine speed down. In the first place this will save your engine, and sometime, given a heavy enough load and a long enough hill, it may save your life. If you let that engine overspeed until your transmission shifts up, you can only get it

back down again by using your brakes. So if your brakes prove unable to slow you down, you are off on the roller coaster. Happy landings, bud.

And your best hope of getting the most braking effect out of this transmission lies in keeping the linkage adjusted right.

Half-Mast

OIL GAGE AS INDICATOR

Dear Half-Mast,

We're having trouble with the oil gages on the new vehicles—they don't read right and changing them for new ones doesn't help. Got any suggestions?

MSgt R. L. H.

Dear MSgt R. L. H.,

The electrical gages on the new outfits are in for some big changes but until they come along it's an even bet that trading your oil gage in for a new one isn't the answer—there's probably nothing wrong with the one you have now. All you can do is treat it as an indicator instead of a gage since the needle's movement will indicate there's oil pressure in the system—if not how much. But to be sure there's enough pressure, test it with a Bourdon gage if there's one around—connecting it at the oil-filter inlet-line.

Half-Mast

SPECIAL TOOL SETS

Dear Half-Mast,

What in blazes happened to the wheel bearing wrenches for our M135's? They don't come with the truck, and I can't find 'em listed in the 2nd Echelon tool kits either, nor yet the Ord 7. Whadda I do now?

WOJG McC

Dear Mr. McC,

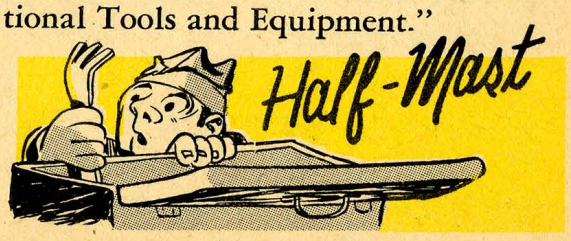
Betcha you either never got, or lost, your copy of Change 2, August 52, for your Ord 7, SNL G-749.

Because you are right, the special tools for each specific vehicle have been shifted around lately, and wheel bearing wrenches are no longer in the tool bag that comes with the truck. But your T/O&E will show you that you not only get the Tool Set, Organizational Maintenance, 2nd Echelon, (No. 1 Common and Tool Set, Organizational Maintenance, 2nd Echelon,) No. 1, Supplemental, but also Tool Set, 2nd Echelon, Special Set B. And that's the kit that has your wheel bearing wrench.

Look in the Ord 7, SNL G-749, Change 2, August 52, page 5, and you will find this kit listed as a change for page 89.

Your gun batteries will find that they get the Tool Set, Organizational Maintenance, No. 1 Common, but not the No. 1 Supplemental, and that they are authorized Special Set A in the pertinent Ord 7 SNL's.

You understand that you are entitled to one of these special tool sets for each type of vehicle you maintain? Look for them in the Ord 7's under "Organizational Tools and Equipment."



BEAT UP DIFFERENTIAL BEARINGS

Dear Half-Mast,

We are having lots of trouble keeping bearings in Chevy differentials (1951 model cars and ½-ton trucks). The rollers and balls get beat up and are black like they've been hot. We use GO 90 which is right for our location. Thought maybe you could help us.

W. L. T.

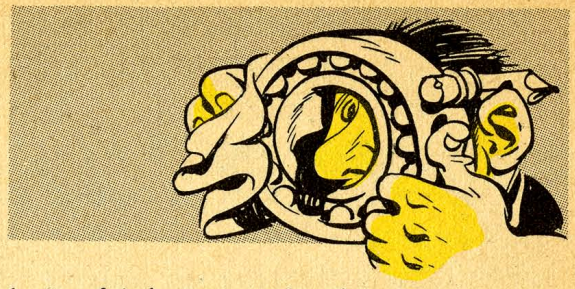
Dear W. L. T.,

Your trouble could mean you've got some of the Chevy passenger cars and light trucks that turned-up with defective differential pinion-shaft front-bearings, and TB Ord 481 (24 Nov 52) which straightened out the problem hasn't caught up with you yet.

Production changed over to a more reliable bearing and arrangements were made to get the new part to vehicles in the field through the regular manufacturer replacement set-up—from the nearest authorized Chevrolet dealer—see SB 9-98-4 (9 Mar 53). The manufacturer's warranty limit on these bearings was extended from the usual 4000 miles to 20,000 miles or one year. The marking: New Departure 5306 on the inner race identifies the old Chevy bearing. The new bearing (Chevrolet Part No. 954780) is marked: New Departure 5306W.

If your vehicles already have the new bearing here are a couple of other things to consider:

Surface discoloration in itself (front and rear-wheel bearings, as well as rear-axle bearings) doesn't mean the bearings are defective, or that there's been



lack of lube, excessive heat or improper adjustment—the color-change appears and disappears during operation and is caused by electrolytic action. If you find the balls (and retainers) OK except for discoloration, go ahead and re-install 'em.

Of course these bearings, like all other bearings, have to be kept hospital clean . . . as always . . .

Half-Mast

TOO POSITIVE

Dear Half-Mast,

Is there any harm in using a 12-volt accessory on a 24-volt vehicle by attaching it to only one of the batteries?

Cpl L. M. T.

Dear Cpl L. M. T.,

Yep . . . there is. Putting a 12-volt accessory on one battery creates an unbalanced load on the batteries which in turn causes the batteries to discharge unevenly. You can't keep both batteries at the same state of charge. How quickly the trouble shows up depends on how much juice the accessory draws (degree of unbalance).

The practice is basically taboo. If you must use a 12-volt accessory, install a dropping resistor in series with the accessory. It'll work much better.

Half-Mast

JEEP IGNITION SWITCH

Dear Half-Mast,

As far as I know, the M38 is the only vehicle on which the ignition switch's OFF position is set diagonally and ON is set vertically. In all other cases, OFF is in the vertical position. So it's no surprise that even though the words ON and OFF are printed on the ignition plate, like MWO Ord G740-W5 fixed it, I've sometimes forgotten and left my '38 parked with the ignition on. And when that happened, it didn't take long for the batteries to run down.

The nice thing is that with a little doing, these switches could be made to work like the others. All you have to do is take off the switch lever, lock-nut and washer and turn the ignition plate so that OFF is at the top. Then after putting a pencil in the stud hole to make a mark on the dash, take off the plate and drill a 1/8" hole at the pencil mark. Finally, take the stud out of the old hole and put it in the new one. Now put the pieces together again with OFF on the ignition plate at 12 o'clock (Fig. 1).

WOJG T. E. C.

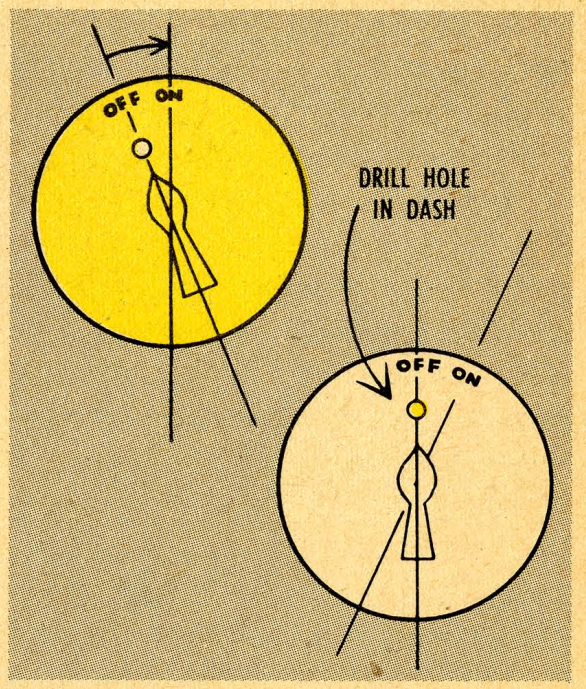


Fig. 1—If you've gotta do some unconfusing, turn the OFF switch position to 12 o'clock.

Dear WOJG T. E. C.,

This takes a little considering, Mr. C. It's sure a good idea, and if all the M38's had been fixed that way in the beginning, things would be just fine. **But** . . . this is a few years later. How about the guy who's already in the habit of driving the M38 and using the diagonal position for OFF, eh? You're putting him in the same boat you were in to begin with—dead batteries either way.

Of course, since you know which end is up now, it's fine, for you—are you the only guy who's gonna drive that M38?

Half-Mast

SUPPLY & DIRECTIVES

FLASH—

NEW SPECIFICATION AND ADJUSTMENT TB

It's here—TB Ord 529 (July 53); which is the latest yardstick of adjustments and service specifications of fits, clearances, and wear limits on 1/4, 3/4, 2-1/2, and 5-ton vehicles. It shoots the works and it supersedes your vehicle TM's on items like these:

Axles
Brakes
Clutch
Cooling System
Electrical System
Engine
Fan Belt
Fuel System
Governor
Steering Gear
Tires
Torque
Transmission

M62 PUBLICATION STORY

Here's the low-down on directives for the new M62 wrecker: TM 9-837 has been distributed and covers the wrecker chassis. For higher echelon maintenance on your vehicle, there's TM 9-8029-3 which will be available about 1 Dec 1953.

The second editions of Ord 7 and 8 SNL G744 contain the M62 wrecker data and are now in the field. The revision of Ord 9 SNL G744 with its wrecker data will be available about 1 Dec 1953.

And for an all-over picture of the operations of the crane, and its controls, there's the item in PS #13, page 554, designed to give you a brief run-down on its features.

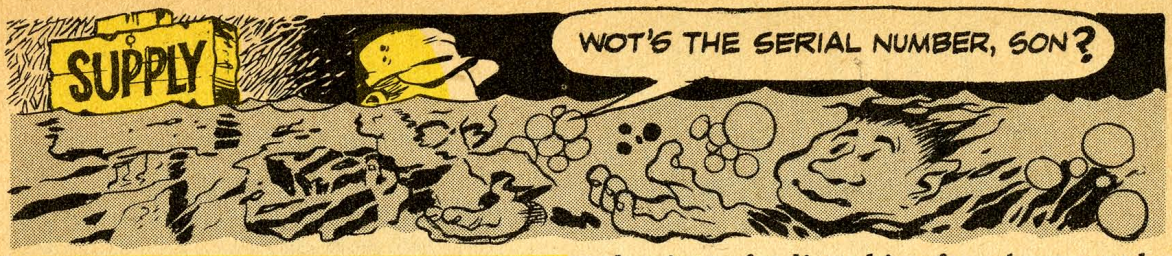
CHECK THAT DOUBLE-TALK

Dear Editor,

Here in Japan we had been using two weekly maintenance check lists, one printed in English and one in Japanese. Not only did it require a lot of the interpreter's time, but also made for bulky record jackets. So we printed a form on which we use both languages. The item to be checked is listed in English with its Japanese equivalent next to it. This way we've overcome a lot of language difficulties.

Cpl Basil Girard
Japan

(Ed Note—Good idea, Corporal. Take heed, motor pool personnel in other foreign theaters.)



WHICH FORDING KIT?

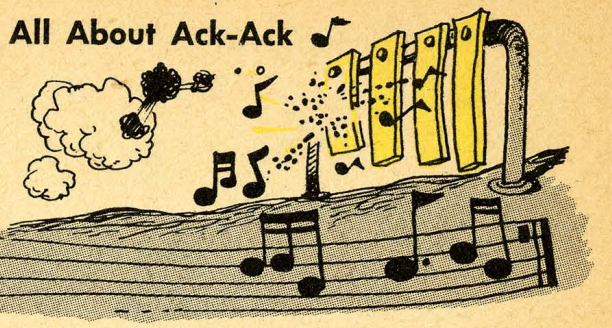
To make sure you'll get what you need when you requisition a deep-water fording kit, check your vehicle serial-number. Seems for economy's sake, most gadgets needed strictly for deep-water fording are no longer going on vehicles in production—fording kits for these trucks are bigger and bulging.

What stayed on and what went into a kit varies with the different vehicles, so you need a briefing. The chart below will help. It lists the vehicle serial number break-point where additional fording items were taken off, and the stock number for the kit you'll need.

DEEP-WATER-FORDING KIT GUIDE

TRUCK	VEHICLE SERIAL NUMBER (BREAK-POINT)	Below & Including BREAK-POINT	ABOVE BREAK-POINT
1/4-ton 4x4 M38	NONE	G250-5701705	G250-5701705
1/4-ton 4x4 M38A1	29295	G250-5701782	G250-5701837
3/4-ton 4x4 M37	80039234	G250-5701704	G250-5701838
2-1/2-ton 6x6 M34 (Reo)	Reo 118436	G250-5701710	G250-5701839
2-1/2-ton 6x6 M34 (Studebaker)	NONE	G250-5701710	G250-5701710
2-1/2-ton 6x6 M135	NONE	G250-5701727	G250-5701727
5-ton 6x6 M41	IHC M41-2104	G250-5701719	G250-5701840
5-ton 6x6 M51 (International Harvester)	IHC M51-3475	G250-5701720	G250-5701841
5-ton 6x6 M51 (Mack) (Diamond T)	NONE	G250-5701841	G250-5701841
5-ton 6x6 M52	Diamond T M52-4489	G250-5701721	G250-5701842
5-ton 6x6 M54	IHC M54-1350 Diamond T M54-0209	G250-5701722	G250-5701843
5-ton 6x6 M62 (International Harvester)	IHC M62-2080	G250-5701723	G250-5701844
5-ton 6x6 M62 (Diamond T)	NONE	G250-5701844	G250-5701844
5-ton 6x6 M139	IHC M139-1850 Diamond T M139-0594	G250-5701724	G250-5701845

ARMAMENT & AMMUNITION



"Home, Home on the Range . . ."

Is your charge home?

The 120mm anti-aircraft gunners are singing since they found a way to send the M15 propelling charge home with the automatic rammer.

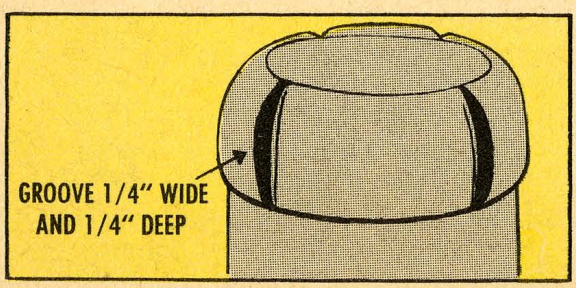
The non-homing trouble snuck in when cork for closing plugs on the charge was dropped in favor of Palmatex. Palmatex burns much better than the old cork, which used to blow measles back on the gunner's face.

But it seems that the Palmatex plugs make such a tight fit in the chamber that they compress the air between the charge and the projectile ahead of it. The compressed air won't let the charge go all the way forward.

With the charge dragging its feet, the breech block won't close. Real trouble is at hand, especially if your target is already there while you're still here.

Head off trouble this way:

Before loading, cut four or five grooves about 1/4" wide and 1/4" deep from front to rear of the Palmatex closing plug (see figure below). That will let the air in front of the charge come out, and the charge will go all the way home.



A hacksaw will do the trick. Or you can use a trench knife or bayonet. Of course, you have to be careful not to chop on the cartridge case. Another thing—you lay the charge sideways so the primer won't get bounced against something that'll set it off while you cut the grooves.

With a big firing mission at hand, you'll want to fix up plenty of charges so you won't need to hold fire while grooves are being cut.

Incidentally, new charges (M15A1) are being manufactured with a closing plug that snugs away home neat 'n easy. If you have any trouble with these new plugs, tell the officer in charge right away. He can pass the word along to Ordnance.

Check that skysweeper ammo

Anti-aircraft men, look sharp.

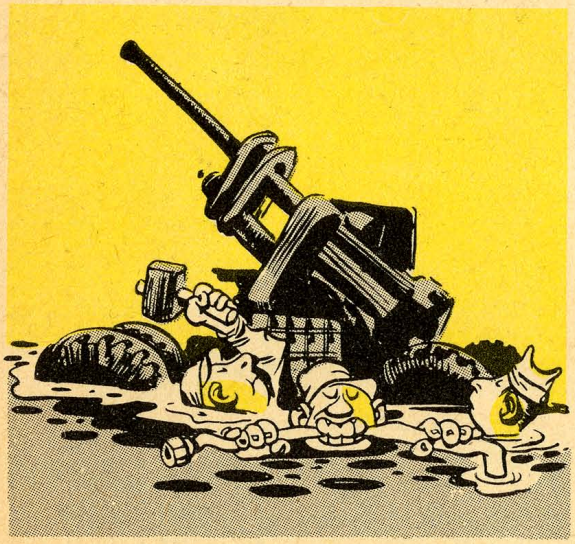
Word has gone out suspending use of Skysweeper ammo listed as "Cartridge, HE, Comp B, T50E2, without fuze, for 75mm gun T83E1 P5LA."

So, before you start ripping up the skies, take a look-see at the markings on the packing. The "Comp B" is your signal to hold off until you get some other kind of ammo.

Oil turmoil

"Run for your lives—the dam's busted!" or some such expression is echoing from one field installation after another these days. The report is that some green joes on 120mm AA gun crews have gone oil-happy in a big way—have the mount swimmin' in oil up to their glasses, and beyond.

Seems as how this particular breed



of schmoe goes nuts when he gets around the transmission and servo units of the elevation and traversing hydraulic-controller mechanisms. The book says, "Oil," so oil it he does. "Above and beyond the call of duty" in the words of the commendations, but that is not what these birds will get.

Maybe these young fellers haven't heard about too much of a good thing. Anyway, they heard that when a drop of oil comes from the level fitting when the cap is removed, the oil level is correct.

So what do they do?

Fill her up! Load it to the gills! Pour on the oil and then forget about it for awhile. That way, all they have to do is march around, check the little drips and report:

"All drips present and accounted for."

That includes them.

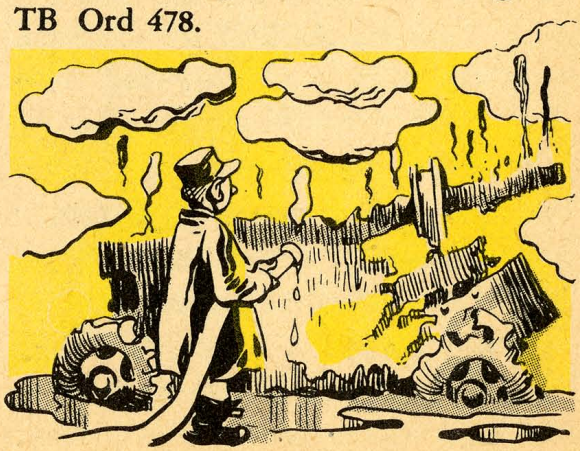
Now. Harken heah! Such nonsense is pure monkey-business, particularly when the overflow is enough to fill a crock. All you have to do, in most instances, is add a very small amount of oil.

It may be necessary, at times, to add a little—check—and then add a little more—until the drip checks.

Water in the cables

One sure way for Joe to gum up his 120 ack-ack is when he turns to the steam cleaner or pressure water hose. When he resorts to such drastic methods of cleaning, Joe manages to foul the works in a real way. One trouble spot is in the covered cables on the two interlocks and the cables to the clutches on the fuze-setter and rammer.

Steam cleaners or high-pressure water hoses force water right through the sheathing on those cables. It isn't long, then, before rust or the weather freezes the cable tight. If you want the details on the use—or non-use—of water, steam and air under pressure for cleaning, see TB Ord 478.



If you're firing .30 and .50 cal. machine guns over troops in infiltration or battle courses, better do some check-firing first and observe muzzle bursts, erratics, and target dispersion. In other words does she shoot straight??

Another thing to remember is that it's considered unsafe to use gun barrels worn beyond a breech-bore diameter of 0.304-inch. After you fire each 1000 rounds the barrel should be carefully inspected for breech-bore erosion by Ordnance people who're authorized to use a breech-bore gage. If the bore is in excess of 0.304-inch, replace it. At the same time make a careful check of the trunnions, elevating locks, and traversing locks. Your buddies' necks—and the other valuable parts—depend on it.

WINTERIZE YOUR SHOOTER WHEN YOU ANTI-FREEZE YOUR SCOOTER

When you hear 'em shouting winterization, don't pass it off as something for the truck driver. The machine gunner's in on the party, too. Antifreeze in that .30 or .50 cal. water-cooled machine gun means the difference between shootin' and hittin' or sittin' and spittin'.

A mixture of 60% antifreeze (ethylene glycol type) and 40% water will keep 'em from freezing, even if the weather hits 62° below. Mix the solution in a separate container and check it with a hydrometer for the proper strength. When you've got the right gravity reading, pour it into the water jacket of the gun and the water chest. Check it occasionally with the hydrometer and maintain the proper mixture.

If you haven't got the hydrometer (with the bulb and the glass float) just mix three parts of antifreeze to two parts of water—all the same difference.

OLD STUFF — NEW NUMBER

If you've been having trouble with numbers when you tried to get a head space and timing gage assembly for the .50 cal. M2, maybe this will help some.

The new Stock Number is J012-535-1217. This is for the same assembly (formerly 41-G-201-175) called for in FM 23-65, Change 2 and Change 4 (Nov 1950 and June 1952).

How's your head space?

More About M24 TANK GUN TUBES CONDEMNED

In addition to information given in PS #11 condemning gun tubes whose serial number (not piece mark) is 70391 or above the following is furnished for more identification.

Tubes to be condemned in addition to D69227 (see TB Ord 255, 22 Feb 45) after 1000 rounds are those with piece marks containing this series of numbers —7230179. Watch for that last "179."

When you don't know how many rounds have been fired and the gun book is missing, these tubes will be junked—but quick.

Read every figure on that tube. All new tubes have piece mark 7230679 and can be fired beyond the 1000-round limit for the older tubes. The "6" makes the difference. No condemning limit has been set for tubes with piece marks ending "679." When the word comes, you'll get it right away. Until then, Ordnance can use a pullover gage to tell if the tube can still be used.

MARK IT FOR GOOD

You can chuck all the usual yelling and fussing you go through to snug your tank gun in the travel lock. Like this:

With your gun in the lock, pick out a tooth in the turret ring close by the turret traversing lock. Paint the ridge of the tooth. Then, paint a line directly above the tooth on the turret-bearing inner race.

Later, when you want to return the gun to the travel lock all you have to do is line up the two marks and drop her in. Remember to bring the gun to the travel lock and lay her in with manual controls.

SHOOTIN' IRON TROUBLE

Been having trouble with your shootin' iron lately?

Does your M1 bolt go back only part way or not at all when you fire a round?

'Course, your trouble could be a stopped-up gas port or a lotta trash or cosmoline in the works. But **your** rifle is as clean as a whistle. What now?

Super-sleuth of the M1 rifle department, Maggie Drawrz, searched from sunny Maine to the rock-bound coast of California for the answer. The old M1's have been driving the bull dead-center without a break since she found it.

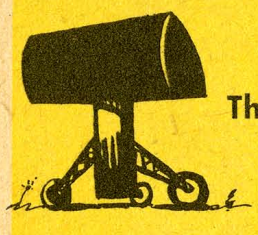
The barrel-bearing was worn down and let gas leak out that ought to go into the cylinder to kick the piston back. That gives weak, sluggish operation, or else the bolt doesn't retract far enough to complete the ejection and reloading cycle.

To cure such shiftless weapons, send 'em back to Ordnance. They can measure the barrel-bearing with a gage to see if it is worn down too much.

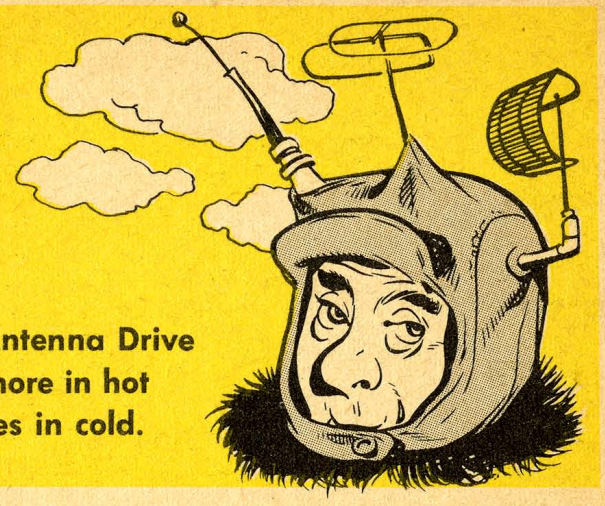
This gage business may mean the difference between bringing your scalp back alive or leaving it to adorn some foreign hill. If that rifle won't fire when the chips are down,—you've had it.

So, get her in for a going over. Tomorrow may be one day too late.

FIRE CONTROL



The M33 Acquisition Antenna Drive Dust Seal needs it more in hot weather than it does in cold.



ALL WEATHER ANTI-FREEZE

Can you imagine anti-freeze being more necessary in warm weather than in cold? Well, the anti-freeze dust seal in the M33's Acquisition Antenna Drive is one dose that is.

To keep dust out of the antenna drive so's the drive motor and gear trains won't clog, a liquid seal that works in both hot and cold climates is the answer. And since water evaporates quickly in warm weather and freezes in cold, and oil hardens in cold and has a tendency to creep when it's fluid, spreading the dust with it, they're out.

Your best bet is anti-freeze, and with more dust in the air in warm weather, there's more need for the ever-needed seal.

Not that you can forget your anti-freeze in cold weather. As the unit comes from the factory, the dust seal's mixture will turn solid at about -9° F. But when you use a combination of 6½ parts of ethylene glycol and 3½ parts of water by volume, it'll stay fluid at -60° F. So be sure—if you expect temperatures to go below +10° F., drain the seal and use the 6½/3½ combination.

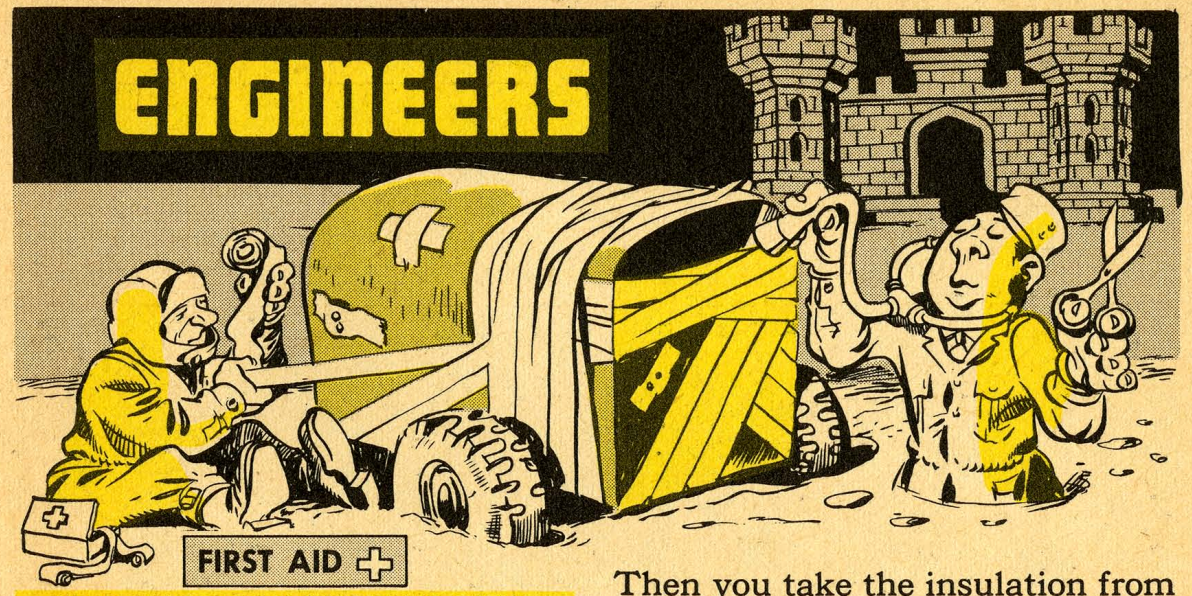
So, check the anti-freeze's level after each march order or emplacement and at least semi-annually otherwise. Use an Ethylene Glycol anti-freeze (Stock No. 51C-1554-15) and check the level by attaching one end of a hose assembly (Stock No. 33-H-265-500) to a filling can (Stock No. F342-7621225), and the other to the pet-cock near the upper rim of the antenna drive unit. Then open the pet-cock and raise the container letting the stuff flow. When it starts to seep through the weephole just above the pet-cock, close it—you've reached the right level for a good dust seal.

NEW DRESS FOR BINOCULARS

Your binoculars are getting that "new look."

When you send them and the carrying cases in for rebuild you're going to get them back in a new olive-drab dress.

In time they'll all be repainted in olive drab but, until that happens, you'll get both black and OD binoculars and black, tan or OD carrying cases. Don't worry about the gigs.



FOR THE HOBART GENERATOR

If you haven't done it yet—waste no time.

The Hobart 30-kw, 400-cycle generator, model HF30G, used with M33 fire control systems, needs a little first aid. The terminal bars on the terminal board in the instrument panel's **rear end** are too close to the rear control-panel cover. With this situation, the generator's vibrations wear away the bars' insulation and you get an arc between the cover and the gas tank. And that's no good. It can explode the generator and slap you down.

Marion Engineer Depot, Marion, Ohio is giving away **free** (order it thru your regular Engineer channels) a kit consisting of an insulating board and ground cables.

The thing's easily installed once you've removed the muffler, top and side cowlings, gas tank, four screws holding the rear metal panel, and the six standoffs between the main contactor and rear metal panel. Then you take the insulation from the kit and put it against the rear metal panel and connect the kit's copper bonding from the rear panel to the skids for grounding (Fig. 1). With that done you've emptied the kit and can put the whole shebang together again.

With this set-up you're safe—if you don't spill gasoline all over the place when you're filling the tank.

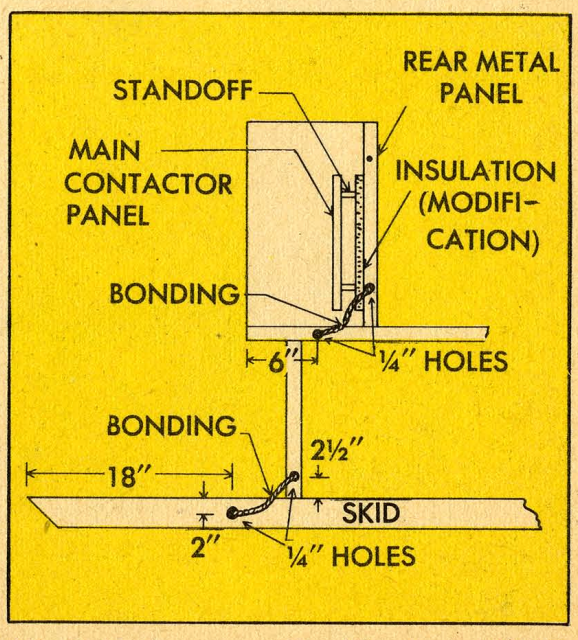
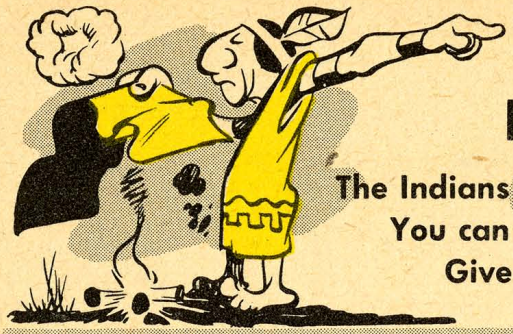
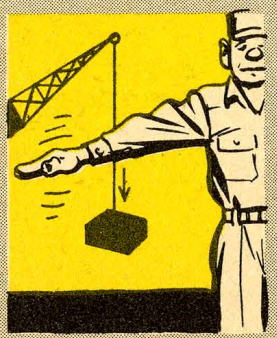


Fig. 1—Pack-up-your-troubles in a HF30G Generator's fire-prevention kit . . . and smile.



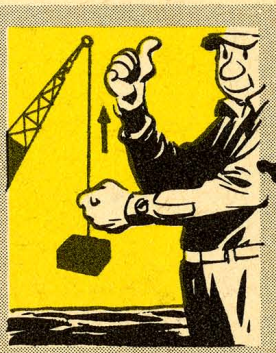
PUT 'ER THERE, PAL!

The Indians said it with smoke signals—
You can say it with these easy-to-learn wig-wags.
Give 'em a hand for safer, speedier operation.



LOWER THE LOAD

RAISE THE LOAD

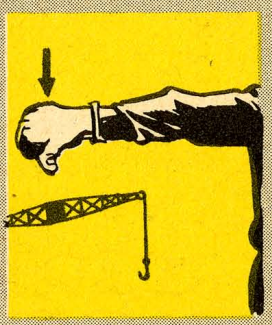


RAISE THE BOOM AND HOLD THE LOAD

STOP

RAISE THE LOAD LIGHTLY

LOWER THE LOAD LIGHTLY



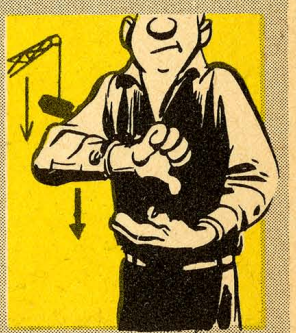
LOWER THE BOOM

RAISE THE BOOM

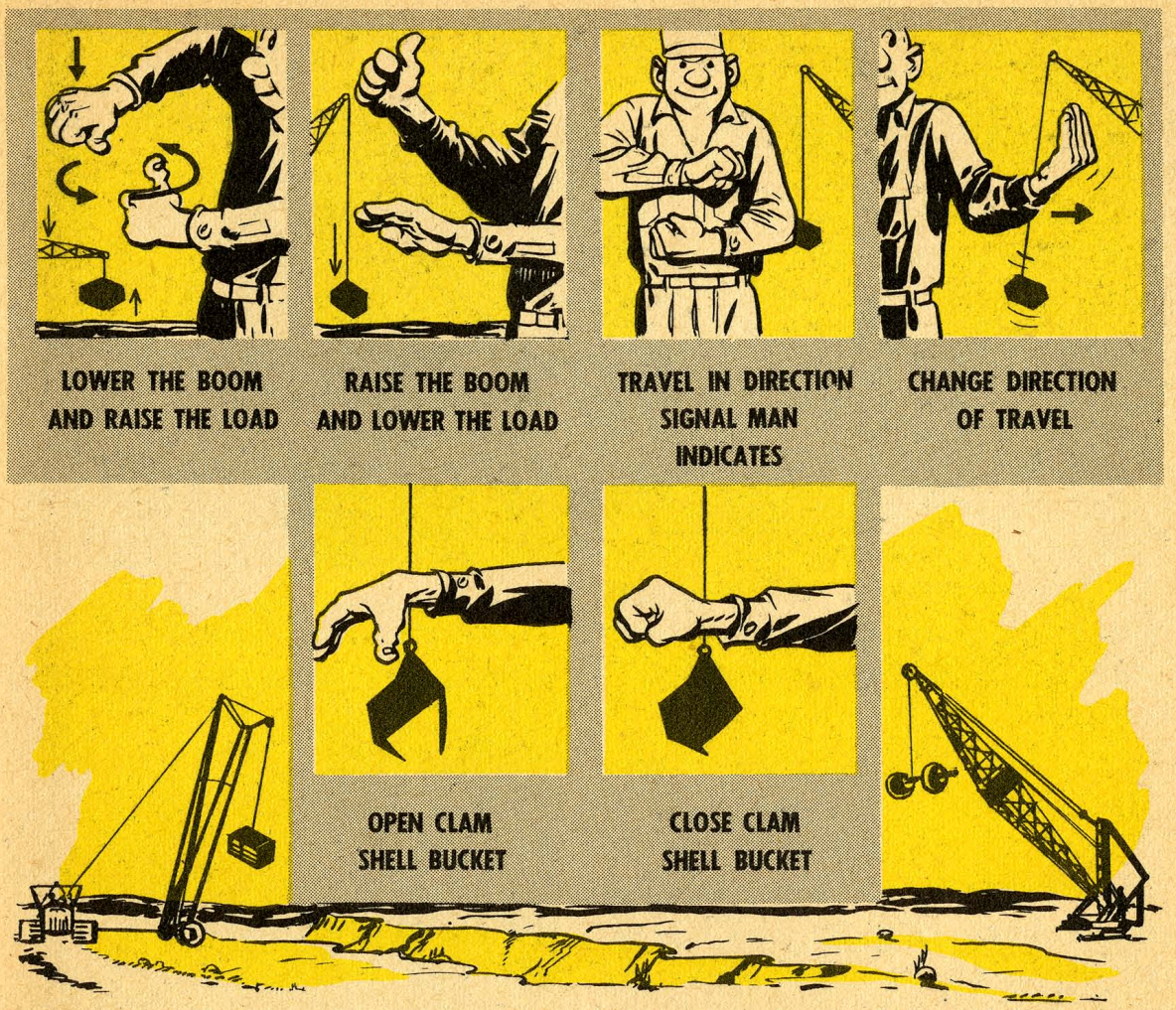
DOG EVERYTHING

SWING LOAD IN DIRECTION HAND POINTS

RAISE THE BOOM LIGHTLY

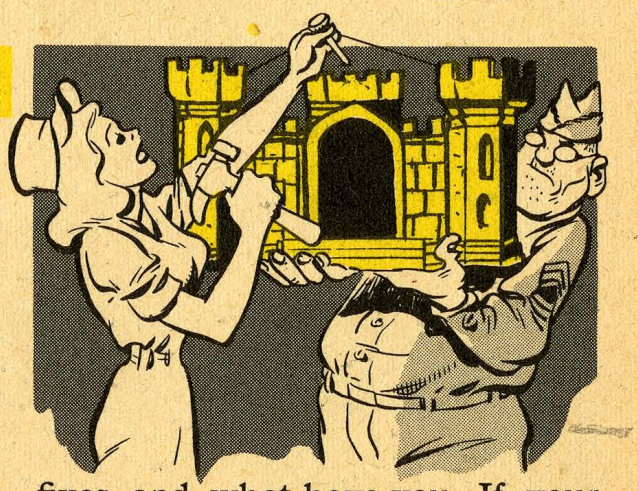


LOWER THE BOOM LIGHTLY



PS ADDS A CASTLE

(Figuratively speaking . . .)



In this case, it's the castle of the Corps of Engineers. Effective with this issue, PS Magazine will regularly include information of preventive maintenance concerning items of Engineer equipment, from picks to power shovels.

PS is mighty happy to welcome every member of the Corps of Engineers to its family reading circle, and ventures to hope that you gents won't be bashful about writing in your questions, problems, fixes and what-have-you. If your bridges bend, or even if your head aches, pray write. Like always, PS will do its level best to give you the latest information available, even if it's only the formula for aspirin.

UNDER-COVER GENERATOR

Dirt, gasoline, metal chips from chafing, and other goblins will get your Hobart Generator's exciter-generator if you don't watch out. With the louvres pointed upward and an open space at the securing screw (Fig. 1), the louvred brush-cover around the exciter-generator housing holds an open invitation for these evil-doers. And once they get going you have excess brush wear as well as danger from shorts and fires.

But here's the gimmick to save the day—turn the brush-cover around so that the louvres face downward (Fig. 2), and then place a metal cap (Fig. 3) over the securing screw. A home-made cap from a piece of 18-gage stock will do it. The part can be installed easily by first removing the screws, then straddling the cap over the opening, and finally reinserting the screws through the louvred brush-cover and cap for a sure hold.

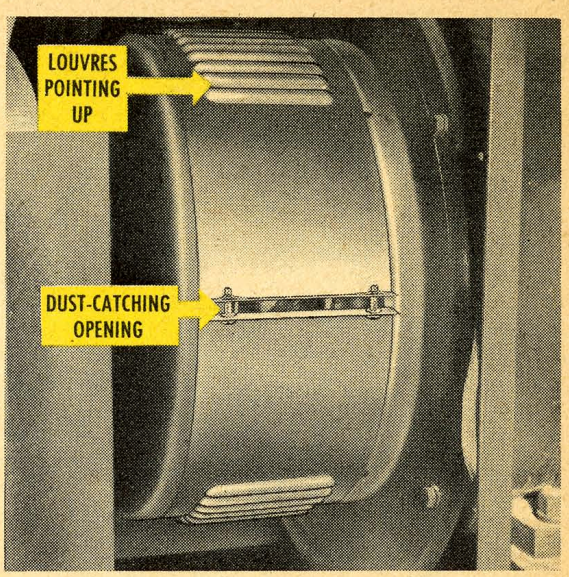


Fig. 1—With louvres pointed up and an open space at the securing screw, dirt'll get in.

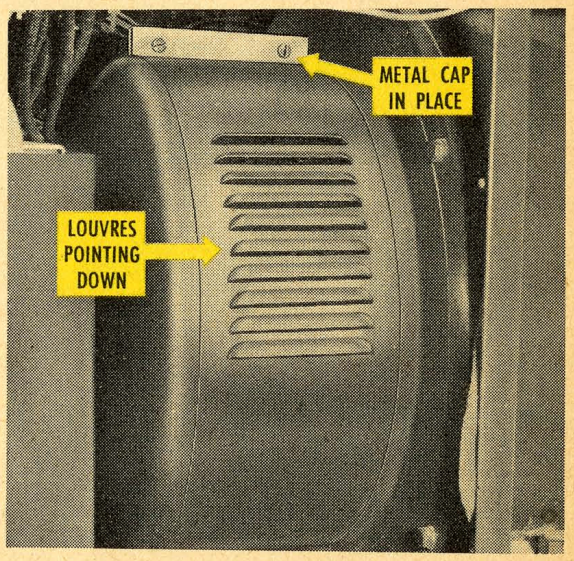


Fig. 2—For a good cover story, here's how to cap it with the shield's screws on top.

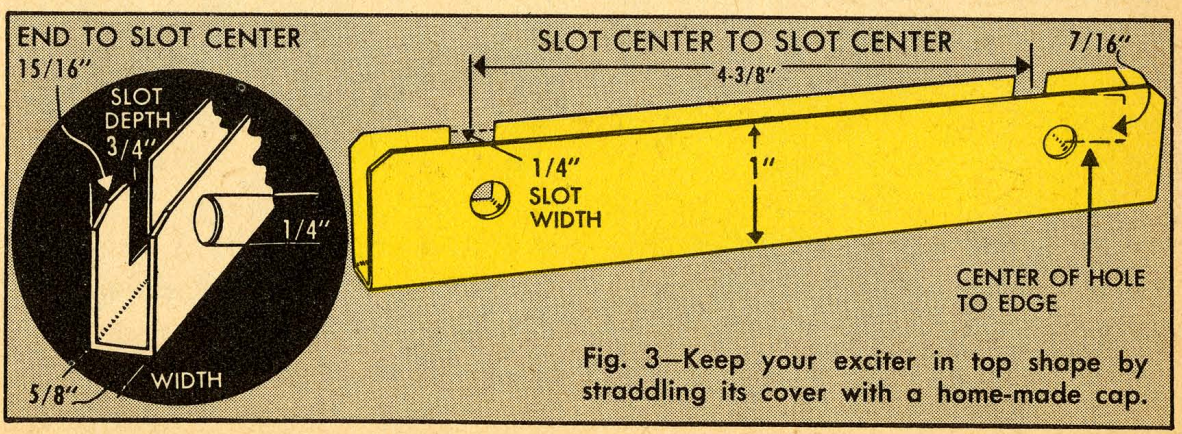
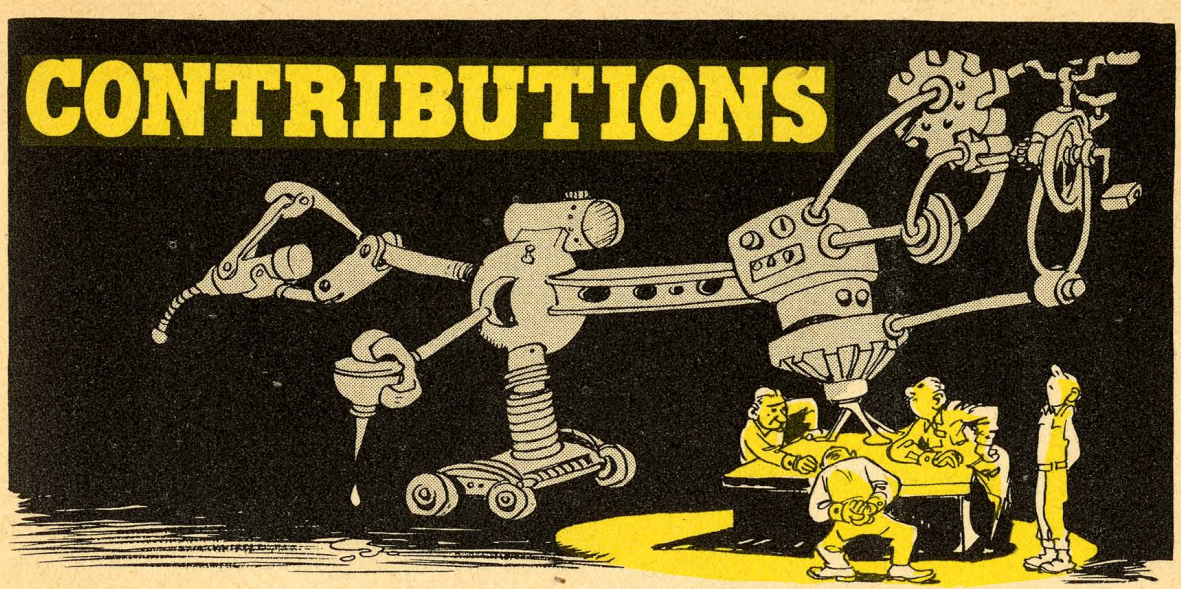


Fig. 3—Keep your exciter in top shape by straddling its cover with a home-made cap.

CONTRIBUTIONS



FREEING FROZEN BRAKES

Dear Editor,

After fording a shallow stream the other day, I stopped my GMC 2½-ton 6x6 truck about 20 minutes to unload. When I was ready to leave, I found that my right intermediate wheel was stuck while all the others moved. Water had splashed onto the brake lining and the cold weather had frozen the lining to the drum.

Rather than call my motor pool for the wrecker I freed the wheel myself. I did this by directing all the power to the stuck wheel. I blocked all the other rear wheels, put the truck in low gear, low range and let up on the clutch. The wheel freed itself right away.

Pvt Walter Gambert
Korea

(Ed Note–The easiest and simplest way to solve the brake-freezing problem is to do some extra braking soon as your truck gets out of the water. That'll dry 'em off before they freeze. You do the same thing when driving on slushy roads in freezing weather. Using the power to break loose frozen brakes will bust up the gears and shafts; it'll really leave you out in the cold.)

WINCH BRAKE

Dear Editor,

A recent issue of PS recommended the winch cable on the M51 be reversed on the drum, allowing the cable to pay-out under the drum and roller, to prevent roller support breakage. It's a good idea but you forgot to make a change on the automatic brake to go with it.

When reversing the cable, it becomes necessary to use reverse gear to winch-in, thereby losing the benefit of the automatic brake. The safety brake is not only made inoperative but when using reverse gear, the power is working against the automatic brake causing terrific friction and early lining replacement. We corrected the condition in the following manner:

1. Remove cover from automatic brake.

2. Remove small plug from housing opposite brake adjustment.
3. Remove anchor bolt, spring, and brake band.
4. Flip the band over and then reassemble by inserting the anchor bolt thru the plug hole.

WOJG D. R. Catrambone
APO 164, New York

POWER-TAKEOFF LOCK

Dear Editor,

Of late there's been considerable damage to winches, PTO's, and transfer case assemblies on the GMC 2½-ton M135. Whether by accident or otherwise, the lever in the cab becomes engaged while the vehicle is moving.

To make sure our power-takeoff control levers stay in neutral we picked up some 3½"x3½" hinges and cut a slot in one side of the hinge 1⅜" wide and 1" deep (Fig. 1). This slot lets the hinge flip over the control lever and holds it in place. We bent up one corner of the hinge for a finger grip. Next, we drilled two ¼" holes in the power-takeoff lock-plate in the cab. We then attached the hinge to the lock-plate (Fig. 2) with two ¼"x½" bolts, using lock-washers to hold them tight. When we installed the hinges we placed the hinge pin so it wouldn't interfere with the control lever when shifting.

J. P. Becker, OCT
Ft Riley, Kansas

(Ed Note—Good idea, but the experts know of the problem and will take care of it soon. Your fix should take care of the emergency until the real thing comes along.)

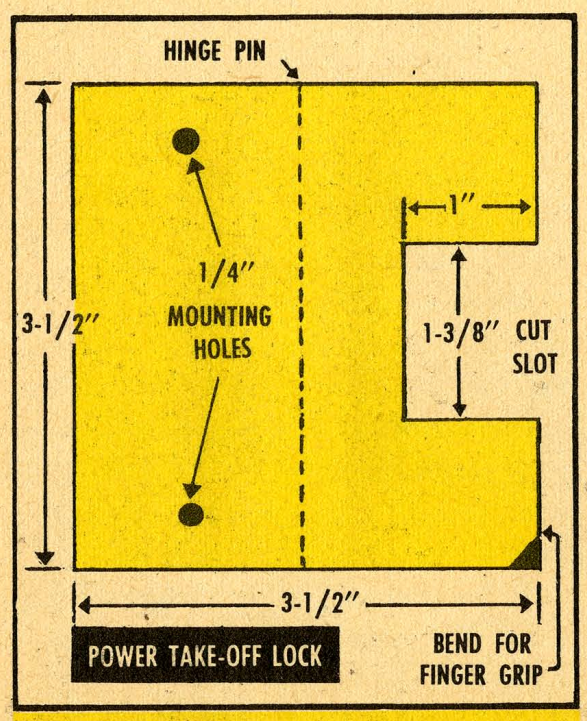


Fig. 1—Takes a hinge cut and drilled like this to keep that PTO lever in its place.

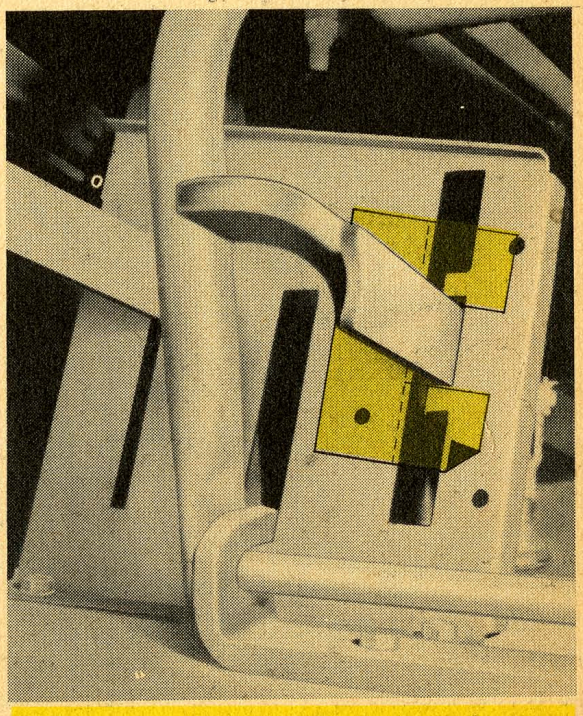
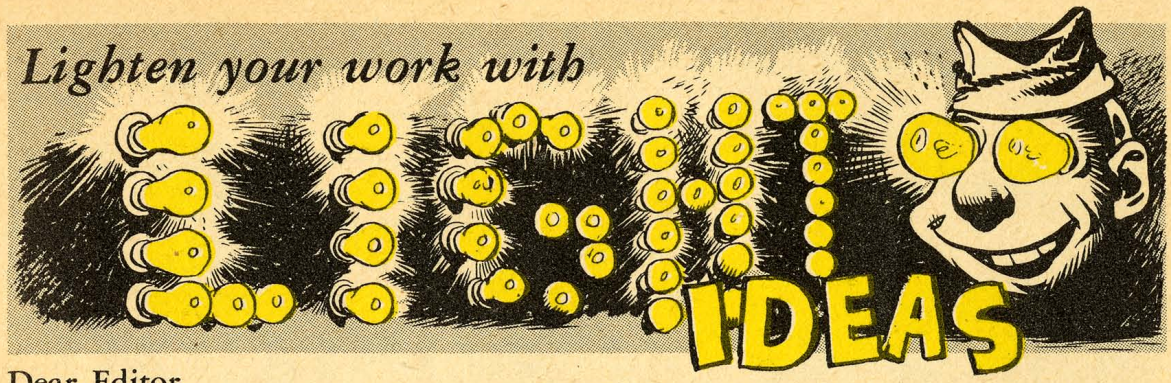


Fig. 2 — Locking the PTO lever with hinge gives you a winch when you want to winch.



Dear Editor,

During recent Field Exercises I needed a light for working in or around my maintenance truck at night. I solved this problem by taking a light-cord extension, which is a part of the Organizational 2nd-Echelon Set Number 1, modifying the plug and replacing the 6-volt bulb with a 24-volt bulb. By plugging the light into the slave cable connection on the vehicle, I had ample light for any type of work I had to do.

It will work on any 24-volt system that has a cable connection. It is useful for repairing other vehicles; or by running the cable between the tarpaulin and across the bows, it provides a good light for working inside the cargo body.

SFC Lindy McTier
APO 46, New York

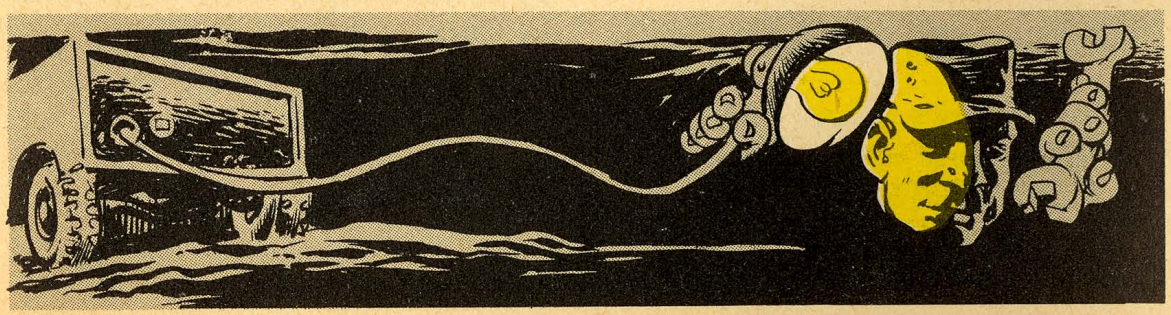
(Ed Note—Sounds like a darn good idea. It's a cinch you won't get any use out of a 6-volt extension cord in a 24-volt outfit. Anyone with the later 24-volt vehicles which have no slave-cable outlets can use a couple of battery clips on the end of the leads.)

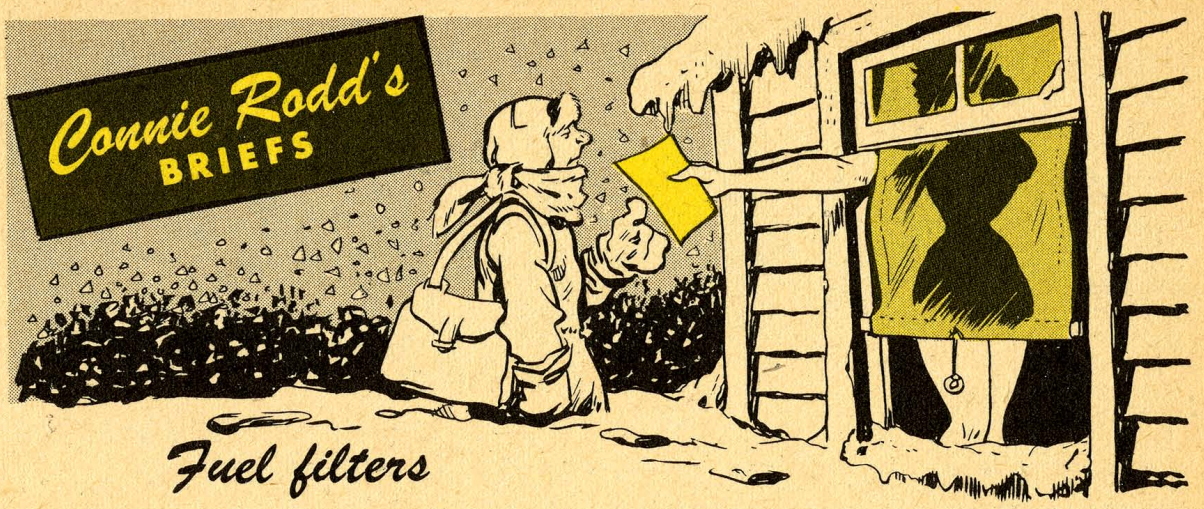
Dear Editor,

Speaking of trouble lights, and cargo handling lights, we always save our Sealed Beam headlights when one filament burns out. By attaching a hook to the lamp and putting on some lead wires, with battery clips on the ends, we had a dandy trouble light. When we had a lot of boxcars to unload into our trucks, we rigged an old headlamp on a trailer light plug and hooked it into the trailer socket on the truck. We hung it inside the boxcar, and it worked fine.

Sgt Frank Archer, Jr.
Japan

(Ed Note—That's another good idea. Just be a little reasonable and don't run the light long from a parked truck. If you must use your light all night, run engine to keep batteries charged.)





Fuel filters

New dope on fuel filters on trucks ranging from the ¼-ton 4x4's to the 5-ton 6x6's says that they should be cleaned every 6 months or every 6000 miles, whichever comes first. This applies to the three major kinds of fuel filters—those in the fuel-tank, those on the fire-wall and those mounted on the frame. For details, search up a copy of TB Ord 487 (3 Feb 53).

Hot wire is here

So, the new ignition cable for replacement in your M-series wiring harnesses is available. "Cable, 5mm, High Tension, H005-0812337" is your baby. Comes in bulk for replacement in the shielded harnesses. Now you can return the 'phone wire, fence strands and clotheslines and install this cable.

Power plant heater kits

Any of you who are working Dodges in cold climates will want to take a quick look at your Power Plant Heater Kits, G249-5701370 (Perfection Stove Co.) before you put 'em back on. Seems there has been some trouble from water getting into the flame switch and shorting it. Best way to fix this situation is to interchange #2 and #3 at the terminal box. New kits will come assembled right.

Call off your dogs

Half-Mast sure put the saddle on the wrong horse in that little M135 "Holes in the Bumper" item in PS #13. Seems he told you shackles are an "H" item, an' the old Sarge couldn't have crammed his foot any farther in his mouth . . . musta been the smog. Anyhoo, he knows his onions now and connects with the idea they're "G" items sure's shootin'. So check it now before you requisition.

M100 storage boxes

Go easy with those storage boxes that're on the M100, ¼-ton trailer. If you pile heavy equipment on the lid or forget to lube the hinges, you're going to have a box that's not worth a tinker's dam. Then, you'll be looking around for something else to pack your stuff in. Why? 'Cause you can't get a replacement. They're on the way out.

PERPETUAL INDEX

Your monthly reference guide to all subjects covered in the last 12 issues of PS Magazine

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	TANK—M46, M46A1	181, 214	246, 260, 263	266, 271, 277	326, 327	365, 369		462, 471, 474 492, 3C	510, 530	586		675	739, 743, 744
	TANK—M47		246	271, 277	317, 320, 326 327	369	413	462, 471, 474	530, 552	565, 588		690, 692	739, 743, 744
	TANK—M48												739, 743, 744
	TANK—T41E1, T41E2 AND RELATED VEHICLES										Complete Issue		730, 743, 744 760
	TRACTORS					408	427, 438			562			
	TRACTOR—M52	206	250		342		422	483, 501, 3C	530, 3C	582		668	760
	TRAILERS			276		405	3C	460, 501		571		672, 708, 712	
	TRUCKS—(WORLD WAR II)	178, 186, 204 205, 207, 217	232, 248, 249 251, 258, 259	281	338, 339	394, 395, 397 405	437	504	535			709	
	TRUCKS—COMMERCIAL		230	274, 310		407							
	TRUCKS—M34	187, 188, 189 215, 216, 218	230, 233	275, 281, 310 312	323, 328, 341 343, 357, 359 360	373, 374, 406	421, 424, 438 453, 454	501	509, 514, 530 3C	566, 580, 597		668, 672	742, 760
	TRUCKS—M35				328				514, 530	566		668, 672, 712	742
	TRUCKS—M37		232, 233, 248 251	276	321, 323, 324		422, 453, 455 456, 3C	472	530, 3C	580, 598		668, 712	742, 760
	TRUCKS—M38 & M38A1	188, 201, 215 3C	225, 230, 233 250, 251, 257	276, 282, 290 312	321, 324, 329 340, 358, 360 3C	366, 395	414, 426, 453 3C	464, 503, 504	512, 530	562, 563, 578 599		666, 668, 670	742, 747, 760
	TRUCKS—M41	208	233	276	342			482, 501, 3C	530, 3C	583		668	760
	TRUCKS—M42								3C			668	
	TRUCKS—M44		230, 233	276		373			530	566			
	TRUCKS—M47								513, 530			670	
	TRUCKS—M51	207, 208, 216	233, 250, 258 259	276	342		422	483, 3C	530, 3C	563, 583, 599		668	760
	TRUCKS—M59											670	
	TRUCKS—M135 & M211		233, 252	276, 283	322, 328	376, 405	423, 438	468, 469, 501 504	509, 512, 530	563, 569, 582, 597, 598		668, 678, 681 708, 712	731, 742, 746 757, 758, 760
AUTOMOTIVE—General Items	ACCESSORIES							460, 489	3C				
	AIR COMPRESSOR						423		546				
	AXLES												731
	BODY	187, 207				395, 396, 406	440	484		568		680	
	BRAKES						423		514				
	CLUTCH								514				
	CONTROLS			312	3C	374			514				
	COOLING SYSTEMS		248	275				3C	513, 536				730
	ELECTRICAL	178, 186, 187 204, 213, 216 3C	246, 247, 261	272, 274, 282 293, 3C	325, 328, 332 3C	373, 374, 377 3C	421, 424, 439 3C	469, 474, 482 484, 502	513, 530, 532	561, 570		672, 673 674, 710	
	ENGINES	200		3C		378, 408			536				
	EXHAUST						454						
	FUEL SYSTEMS						420, 421	470				668	
	FUNDAMENTALS & MAINTENANCE PRINCIPLES	2C, 177, 179 188, 190, 198	222, 223, 231 234, 244, 3C	265, 284	315, 325	364, 370, 372 408	410, 411, 419 434, 441, 450 452	2C, 459, 471 476, 483, 486 3C	515, 527, 532 547, 549, 550 552	2C, 596, 4C		671, 672, 676 707, 709	732, 733, 741, 748
	INSTRUMENTS							468, 469					
	LUBRICATION		262	3C	354, 358	395, 397, 3C	426	461, 485, 3C	536	571		679	
	PUBLICATIONS								537, 546	570, 597		706, 707	2C
	SUPPLY		261	306, 307, 312	355, 356	402, 4C	425, 440, 450 451, 4C	499	546, 548	596		678, 682 706, 4C	746
	TIRES				331	363, 406	451	459, 484, 3C	550	589, 597		680	
	TOOLS	178, 184	228, 261, 262	311	354	408	439, 453, 454	470, 3C	537, 547	569		671, 709	
	TRACKS (TANKS)	214											
	TRANSMISSIONS			271			424, 434						
	WHEELS	206						3C					758
	WINCHES				357				535	564			
ARMAMENT & AMMUNITION	AMMO (GENERAL)								506, 507, 538				
	ANTI-AIRCRAFT									591			
	HOWITZERS & GUNS			267	344, 349	362, 387		458, 491, 500 501, 502, 503	507				
	MACHINE GUNS				316					572		712	752
	MISCELLANEOUS			268, 294	314, 359	362	412, 3C	491	507			702	
	MORTARS			296, 297	345, 3C	364	442			590			759
	RECOILLESS RIFLES									592, 593			
	RIFLES & CARBINES			295	344, 3C	3C	443			591		701	753
	ROCKET & GRENADE LAUNCHERS						443					698, 700	753
FIRE CONTROL	COMPASS & WATCHES							493					
	DIRECTORS & RADAR			299	348, 349		445		540				
	MISCELLANEOUS			298, 299		3C	445		541				
	SIGHTS & 'SCOPES				315		444			592, 593		690, 692	
ARMY AIRCRAFT	H-13, H-19, H-19C							495	543	594		703	
	L-17, L-17B			303	350								
	L-19, L-19A			302, 304	350, 351, 352	400, 401	446, 448	496	544			703, 704	
	L-21								542				
	LC-126, LC-126C				351, 352				544, 545	595			
	MISCELLANEOUS			301, 303, 304	350, 351, 352 353, 354	398, 400, 401	447, 449	494	542, 544	594			754

2C—INSIDE FRONT COVER; 3C—INSIDE BACK COVER; 4C—OUTSIDE BACK COVER

LIGHTEN

YOUR SUPPLY ROOM LOAD!

No point in keeping what you don't need...

GET RID OF IT...
LIKE THIS:

Pass the word via letter thru channels to higher headquarters recommending that your outfit turn in equipment and parts that are not needed. Your authority to do it is Department of Army Circular 33 (May 53).

Be sure you keep only the right parts and not too many of those; avoid excess; save old parts that can be repaired or reused and do not exceed T/O&E and SNL allowances.

Bulging shelves of unused equipment and parts just cause extra work. Get those parts to where they can be used while they're new.

CHANNELS

IF IT'S NOT USED...IT'S NOT NEEDED